THE ROLE OF BANKS IN THE PROVISION OF EXTERNAL FINANCE TO DEVELOPING COUNTRIES WITH PARTICULAR REFERENCE TO UK BANKS BETWEEN 1970-1980

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Abstract

The thesis is divided into nine chapters. The first chapter gives an overview of the external financial flows to the Less Developed Countries (LDCs) between 1970 and 1980. It explains why these countries increasingly turned to private sources of external finance and why the banks in particular were willing to provide that finance.

Noting the needs of these countries for continued access to private external finance, the thesis proceeds to investigate four areas fundamental to the continuity of that access. They are:-

1) The determinants of the financial terms of bank and bond finance.

2) The impact of further lending to LDCs upon bank balance sheets.

3) The attitudes of the lending bankers to ways of increasing private financial flows.

4) The reasons for the limited role played by the eurobond market in providing such finance.

As a preliminary to investigating these points chapters two and three discuss the nature of the eurocurrency market generally, reasons for its growth and the statistical sources relating to that market. Chapter three also develops a theoretical model of the eurobank lending function.

Returning to the fundamental points noted above, chapter four investigates the determinants of the financial terms of private finance ie euro money-market interest rates, the spreads on syndicated loans to LDCs and the interest yield on LDC bond issues.

Chapter five investigates the impact of the growth in bank lending to LDCs upon UK banks' balance sheets.

Chapter six reviews the literature making suggestions for reducing the risks associated with lending to LDCs. Chapter seven reports results of a questionnaire survey of nearly two hundred London banks regarding the suggestions noted in chapter six. The presumption behind these two chapters is that reduced risk will, ceteris paribus, increase the flow of finance. The responses to the survey confirm the validity of this presumption.

The reasons for the limited role of the eurobond market in providing private external finance to LDCs is investigated in chapter eight with the aid of a second questionnaire. This survey was directed at the London managers of eurobond syndicates.

The last chapter gives a resumé of the thesis and makes recommendations for easing the external debt problem of the borrowers and bankers.

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Preface

This research was started in the spring of 1979. Since 1980 it has been generously supported by Brighton Polytechnic who have met the financial costs and sympathetically arranged my teaching so that the research work could be carried out.

Many people have provided personal encouragement and assistance over the last five years. At the School of Oriental and African Studies a particular debt of gratitude is owed to Peter Ayre, my supervisor, for his continuous encouragement and guidance towards the final objective.

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This research could not have been completed without the help and cooperation from the one hundred or so bankers in London who, too numerous to mention by name, have each individually contributed to my greater understanding of their operations and attitudes.

Finally, a warm thank you must go to Mrs Sharon Blows who has managed to transform my almost illegible script into the final copy of this thesis.

Chapter 1

AN OVERVIEW

1.1 Introduction

The United Nations designated the 1970's as the second development decade. Development did indeed take place. The poor countries of the world experienced an annual rate of growth of GNP averaging 5.375%. Populations also grew, making the increase in per capita GNP average 3.3% according to World Bank figures. The same institution estimates that the rate of gross investment averaged 26.025% per annum while the savings rate averaged 25.375% per annum, (World Bank Annual Report 1982, p130).

These rates of growth and investment were achieved with the assistance of flows of external financial resources to these countries. Financial flows can be classified into those that create debt obligations and those that do not. The former consist of the many forms of borrowing that take place in international financial markets, or from governments, or from the suppliers of goods and services. The latter consist of direct investments, and of grants and gifts, generally in the form of aid to governments.

This study is about a section of debt creating flows - the borrowings from financial institutions. In particular, the aim of the research is to analyse the role of financial institutions in providing or facilitating the financial flows to developing countries via the eurocurrency markets between 1970 and 1980. Where possible or appropriate, the role of financial institutions located in the United Kingdom will be highlighted. Moreover, where events make it apposite, the time period of analysis is extended to the time of writing (end 1983).

In the context of this research the term "UK Financial Institutions" includes the United Kingdom offices of financial institutions registered abroad.

1.2 The Flow of Financial Resources to LDCs 1970-1980

During the decade of the 1970's total annual net resource receipts by the less developed countries (LDCs) grew from US $20.04 billions in 1970 to US $96.05 billions in 1980 according to OECD data, (OECD 1983). During this period Official Development Assistance grew from US $8.23 billion or 41% to US $37.33 billion or 39% of the total. Non-concessional Flows, on the other hand, grew from US $10.95 or 54% to US $56.41 billion or 59% of the total.

Of the Non-concessional Flows US $9.08 billion or 45% were from private sources in 1970 whereas US $45.04 billion or 46% were from private sources in 1980.

Of these private sources of finance, direct investment constituted US $3.69 billions or 18% in 1970 compared with US $10.54% billion or 11% in 1980. This decline has been compensated for by the rise in private debt creating flows from US $5.39 billion or 27% to US $34.5 billion or 36% over the same period.

A notable feature is that private flows were greater in the years 1978 and 1979 (ref Table 111-1 OECD 1983), when the proportions of private flows in total flows were 55% and 52% respectively, than they were in 1980.

It is to be expected, a priori, that the benefits derived by a recipient country are positively related to the quantity of funds received. Therefore the distribution of the total flow between types of recipients, as well as the types of flows, where these have different terms attached, is an important consideration in this respect.

Below, the distribution of the total flow for 1978 is given. The classification of developing countries follows that used by the OECD. An alternative classification used by the IBRD is also used in this study where the data require it. Appendix 1 to this study gives details of these classifications.

It can be seen that the majority of the concessional flows go to the poorest countries while most of the non-concessional flows go to the richer developing countries particularly the newly industrialised countries (NICs).

It is particularly notable that the distribution of financial resources between LDCs bears little relation to the recipients' share of total LDC population. For example in 1978 the NICs had 15.7% of the total population but received 28.7% of total external financial resources. The least developed countries (LLDCs) had 11.7% of population but only received 6.0% of total external financial resource flows.

Table 1.1

Net external financial receipts[a] of developing countries by type and income group 1978

	All LDCs		Non OPEC LDCs		LICs		NICs		Other MICs		OPEC countries		LLDCs	
	$ billion	% of total	$ billion	% of total	$ billion	% of total	$ billion	% of total	$ billion	% of total	$ billion	% of total	$ billion	% of total
	(1) [=(3)+(1)]	(2)	(3) [=5+(7)+(9)]	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
ODA, total	23450	29.5	22834	34.9	13440	71.1	501	2.2	8892	37.7	616	4.3	4087	85.2
DAC bilateral	13124	16.5	12784	19.6	6811	36.0	350	1.5	5623	23.8	340	2.4	2160	45.0
OPEC bilateral	2970	3.7	22946	4.5	1502	7.9	40	0.2	1404	5.9	24	0.2	408	8.5
Multilateral	5996	7.5	5891	9.0	4401	23.3	97	0.4	1393	5.9	105	0.7	1436	29.9
Other	1360	1.7	1213	1.9	726	3.8	14	0.1	472	2.0	147	1.0	83	1.7
Non-Concessional, total	56159	70.5	42515	65.1	5470	28.9	22318	97.8	14727	62.4	13644	95.7	711	14.8
Bank lending	22514	28.3	17670	27.0	1053	5.6	11625	50.9	4992	21.1	4844	34.0	108	2.2
Bonds	3027	3.8	2365	3.6	115	0.6	1832	8.0	418	1.8	662	4.6	-3	-0.1
Export credits	12247	15.4	6490	10.0	1226	6.5	2030	8.9	3234	13.7	5757	40.4	148	3.1
Official[b]	2999	3.8	2137	3.3	370	2.0	1108	4.9	659	2.8	862	6.0	5	0.1
Private[c]	9248	11.6	4353	6.7	856	4.5	922	4.0	2575	10.9	4895	34.3	143	3.0
Direct investment[c]	11833	14.9	9818	15.0	873	4.6	5436	23.8	3509	14.9	2015	14.1	52	1.1
OPEC bilateral	1020	1.3	727	1.1	286	1.5	65	0.3	376	1.6	293	2.1	205	4.3
Multilateral	3408	4.3	3350	5.1	676	3.6	1305	5.7	1369	5.8	58	0.4	58	1.2
Other	2110	2.6	2095	3.2	1241	6.6	25	0.1	829	3.5	15	0.1	143	3.0
Total Receipts	79609	100.0	65349	100.0	18910	100.0	22819	100.0	23619	100.0	14260	100.0	4798	100.0
Share of recipients GNP		100.0		82.5		17.9		42.5		22.1		17.5		3.0
Share of population		100.0		95.5		60.7		15.7		19.0		4.5		11.7
Share of total resources		100.0		82.1		23.8		28.7		29.7		17.9		6.0
Share of ODA		100.0		97.4		57.3		2.1		37.9		2.6		17.4
Share of non-concessional		100.0		75.7		9.7		39.7		26.2		24.3		1.3

a) Includes Secretariat estimates to distribute amounts reported as geographically unallocated among the income group. Excludes China.

b) Direct export credits only. Excludes supporting funds for private investment and export credits which are geographically distributed as part of the two latter components.

c) Includes supporting funds provided by the official sector.

Source: Review Economic Development, OECD DAC 1980

Specific discussion of the distribution of bank debt amongst LDC borrowers is included in pages 54 to 70 below.

Returning to the changes in the quantities of debt during the 1970's, IBRD World Debt Tables (IBRD 1983) show the stock of disbursed debt outstanding to LDCs rising from US $91 billion in 1972 to US $404 billion in 1980. Of these amounts public and publicly guaranteed debt rose from US $68 billion to US $331 billion and private non guaranteed debt rose from US $21 billion to US $73 billion. However, these figures will under estimate actual debt outstanding. The weaknesses of the statistics covering international debt are discussed in chapter 2 page of this thesis.

Looking in more detail at the public and publicly guaranteed debt only, because of limitations of data on the private unguaranteed debt, we note that disbursed debt owed to official creditors rose from US $44 billion to US $155 billion between 1972 and 1980. During the same period debt owed to financial markets rose from US $14 billion to US $154 billion. Thus, whereas official debt constituted 67% of total debt in 1972, it constituted only 46% in 1980. Debt to the financial markets, on the other hand, only accounted for 21% in 1972 but represented 46% of total debt in 1980.

Accompanying the changing nature of the sources of debt have been changes in the debt servicing commitments and the financial terms attached to the debt. These are discussed in detail on page 55 of this chapter, but at this point a few figures are in order. Between 1972 and 1980 total debt service payments rose over 700% but such payments to the financial market creditors rose nearly 1400% compared with the 1100% rise in debt outstanding to those creditors.

The average interest rate on debt to official creditors rose from 4.3% to 5.3% during this period, maturities shortened slightly from 25.3 to 23.7 years, grace period shortened from 6.7 to 6.1 years and the grant element fell from 41.5 to 34 per cent. However, the average

interest rate on debt owed to private creditors rose from 7.3% to 12.8%, the average maturity fell slightly from 9.2 to 8.9 years, grace periods actually rose from 2.9 to 3.4 years and the grant element fell from 11.1% to minus 12.5 per cent, (IBRD 1983 p3).

The substantial rise in both the amount and relative importance of LDC debt owed to the financial markets, and to the banks in particular begs four questions:-

1) Why was there such a need for the financial flows to developing countries to grow as fast as they did?
2) Why have the developing countries turned so convincingly to the private financial markets of the developed countries for their external finance?
3) How does this shift towards private sources of finance alter the net benefits enjoyed by the borrowers and their ability to service existing and future debt?
4) Why have the private financial sources been so willing to provide funds to the developing countries?

These questions are answered in the following sections of this chapter. However, analysing the answers raises further fundamental questions. They are:

1) What influences the financial terms attached to bank and bond finance to LDCs?
2) How has this increase in LDC debt influenced bank balance sheets?
3) What factors will help maintain the flow of, particularly, bank finance to the LDCs?
4) Why has the bond market played such a small role in the external financing of LDCs?

These questions are answered in the following way:-

Question one is answered in chapter four where the determinants of eurocurrency money market and bond market interest rates and the spread on syndicated loans are analysed.

Question two is answered in chapter five by analysing the impact of increased bank lending to LDCs upon the financial health of banks, particularly UK banks as indicated by their balance sheets and profit and loss accounts.

Question three is answered in chapter seven with the aid of the responses of a survey of bankers in the City of London.

Question four is also answered with the aid of a survey of City bankers reported in chapter eight.

As a preliminary to these chapters, an analysis of the mechanics of the eurocurrency market is the subject of chapter two and a model of the eurobank lending function is the subject of chapter three.

1.3 The Need for Such Growth in Financial Flows

Balance of Payments Deficits

The immediate need for the substantial increase in international financial flows to the developing countries during the 1970's stems from their balance of payments disequilibria.

These disequilibria were caused by policies of economic growth, import substitution and after 1973 the higher costs of imported fuels, particularly oil, together with recessionary induced contraction of export markets in the industrialised countries. Internal mismanagement of the developing economies could also have resulted in balance of payments difficulties, but there seems little evidence of mismanagement for the LDCs as a group, although there are isolated examples, (Avromovic 1982, Brittian 1977, Hallwood 1980, Killick 1981). The policies of growth and import substitution precluded the substantial economic adjustment that would have been required in order to eliminate the balance of payments deficits.

The higher cost of oil is just a specific case of a secular deterioration in the terms of trade experienced by non oil exporting developing countries, as researched in such papers as Prebisch (1950), Sproas (1980) and reviewed in Bird (1978). However, it is not intended to investigate the impact of any secular deterioration of NOPEC terms of non energy trade because any deterioration that may have taken place is overwhelmed by the deterioration in terms of trade caused by higher prices of energy imports.

The following figures show that there were substantial deficits for LDCs as a whole until 1973. Thereafter, however, substantial deficits were suffered by the non oil exporting developing countries (NOPEC), while the oil exporters experienced very large surpluses.

Table 1.2

Balance of Payments Disequilibria of LDCs

	NOPEC DEFICITS	OIL EXPORTERS SURPLUSES
1970	8.6	0.3
1971	11.0	2.1
1972	8.9	1.7
1973	11.5	6.6
1974	36.9	67.8
1975	45.9	35.0
1976	32.9	40.0
1977	28.6	31.1
1978	37.5	3.3
1979	57.6	68.4
1980	82.1	112.2

Source: IMF Annual Report 1981 p18 and 1974 p22
Figures in billions US $

Given that the developing countries would have found speedy internal adjustment to these deficits incompatible with their aspirations of growth, it was essential for these deficits to be financed.

The following figures show how the NOPEC deficits were financed from 1973-1980:

Table 1.3

Non oil developing countries: current account financing, 1973-1980

	1973	1974	1975	1976	1977	1978	1979	1980
Current account deficit	11.5	36.9	45.9	32.9	28.6	35.8	52.9	82.1
Financing through transactions that do not affect net debt positions	9.8	13.2	11.7	12.1	14.4	16.2	19.4	20.6
Net unrequited transfers received by governments of non oil developing countries	4.9	6.9	7.4	7.6	8.3	8.0	10.7	10.6
SDR allocations, gold monetization, and valuation adjustments	0.6	0.8	-1.0	-0.2	1.0	2.0	0.8	2.1
Direct investment flows, net	4.3	5.5	5.3	4.7	5.1	6.2	7.9	7.9
Net borrowing and use of reserves	1.7	23.7	34.2	20.8	14.2	19.6	33.5	61.5
Reduction of reserve assets (accumulation, -)	-9.3	-1.2	2.0	-12.7	-11.9	-18.2	-11.0	-1.2
Net external borrowing	11.0	24.9	32.2	33.5	26.1	37.8	44.5	62.7
Long term from official sources, net	5.5	9.6	11.4	10.2	12.4	13.3	15.9	21.0
On concessionary terms	*3.7*	*6.5*	*7.1*	*6.6*	*8.1*	*8.7*	*10.7*	
On non concessionary terms	*1.8*	*3.1*	*4.3*	*3.6*	*4.3*	*4.6*	*5.2*	
Other long term borrowing from non residents, net	6.6	10.2	14.7	17.6	15.8	25.1	23.4	27.2
From financial institutions	*4.0*	*8.6*	*9.2*	*10.9*	*15.6*	*19.3*	*17.3*	*24.2*
Through bond issues	*0.5*	*0.3*	*0.2*	*1.1*	*2.6*	*3.0*	*2.0*	*3.0*
Other sources	*2.1*	*1.3*	*5.3*	*5.6*	*-2.4*	*2.8*	*4.1*	*-0.1*
Use of reserve-related credit facilities, net	0.3	1.6	2.4	4.3	0.4	0.7	0.2	3.0
Other short term borrowing, net	-	5.1	6.5	3.9	-0.8	1.1)	5.0)	11.6
Residual errors and omissions	-1.4	-1.6	-2.8	-2.5	-1.7	-2.4)		

Source: IMF Annual Report 1981, p32
Figures in billions US dollars

The decline in the relative importance of direct investments and the growing importance of external borrowing, and particularly the borrowing from financial institutions has already been discussed. It must be noted that some of this borrowing has been used to finance the accumulation of reserves that has taken place over this period as well as financing deficits.

Policies of Growth and Import Substitution

The influence of growth aspirations on these balance of payments deficits is difficult to prove. However, if the developing countries wished to increase their rate of growth, particularly through industrialisation, one would expect to see imports of capital goods increasing as a proportion of total imports. It may also be expected that exports of manufactured goods would form an increasing proportion of total exports as industrialisation proceeds. A policy of import substitution would also cause such trends in trade.

The following figures show the growth of total imports from the developed market economies by the developing economies. The growth of imports of machinery and the percentages of the total imports that machinery represents are also given.

Table 1.4 Growth of developing country imports

	Value of Total Imports	Quantum Index 1970=100	Value of Imports of Machinery	Quantum Index 1970=100	Value of Machinery Imports as % of Total Imports
1968	33.75	88	13.63	88	40.39
1969	37.02	97	15.45	103	41.73
1970	41.91	100	17.26	100	41.18
1971	47.14	105	20.06	102	42.55
1972	53.46	109	23.66	108	44.26
1973	73.74	122	31.36	123	42.52
1974	113.79	148	45.53	159	40.01
1975	138.31	160	63.96	184	46.24
1976	147.19	170	73.45	198	49.90
1977	172.93	189	83.68	206	48.38
1978	207.22	192	96.60	196	46.62
1979	235.23	196	103.98	195	44.20
1980	293.39	223	127.91	225	43.59

Source: United Nations Statistical Yearbook 1981 p45 & p49
Value: Figures in billions US $

The growth in the value of machinery imports has been continuous and the growth in the increase in the quantity of those imports was only interrupted in 1978 and 1979.

Similar classifications of figures given below show the behaviour of the exports of manufactured goods from the developing countries.

Table 1.5 Growth of developing country exports

	Total Exports less Fuel	Manufactured Exports	Quantum Index 1970=100	% of Total
1968	26.37	8.81	75	33.41
1969	30.13	10.80	90	35.84
1970	33.74	12.61	100	37.37
1971	34.57	13.37	102	38.68
1972	41.74	16.72	128	40.06
1973	60.72	26.20	149	43.15
1974	80.71	35.46	169	43.94
1975	76.84	34.44	164	44.82
1976	85.90	41.79	206	48.65
1977	113.05	53.53	213	47.35
1978	131.12	67.79	238	51.70
1979	165.42	88.41	266	53.45
1980	193.06	106.74	272	55.29

Source: United Nations Yearbook 1981 p44 & p48
Value : Figures in billions US $

The figures for fuel exports have been deducted from total exports in order to abstract from the post 1973 influence of oil prices on value of exports.

It can be seen that exports of manufactured goods have grown considerably over this period and have assumed a more important role in the export business of the developing countries, rising from 33.41% of total exports in 1970 to 55.29% in 1980.

A final set of figures, extracted from various issues of the World Bank Annual Report, show a continuous excess of gross investment over domestic saving as proportions of developing country GNP.

Table 1.6 Savings and investment as a percentage of developing country GNP

	Save %	Invest %		Save %	Invest %
1968	15.8	18.6	1975	22.3	23.8
1969	17.3	19.9	1976	25.5	24.6
1970	17.9	19.9	1977	23.2	24.8
1971	17.9	20.1	1978	25.8	26.9
1972	18.1	20.6	1979	26.4	26.3
1973	22.2	21.7	1980	25.6	24.9
1974	23.5	22.6			

Source: IBRD Annual Report, various issues

These figures show that investment has increased continuously during the period under study and that for most years investment exceeded domestic savings. Thus these countries, as a group, have experienced what may be a savings constraint in the form suggested by Chenery & Bruno (1962), McKinnon (1964), Chenery & Strout (1966); however, see Joshi (1970). This factor alone would necessitate external flows of finance.

Clearly these three sets of figures indicate the commitment to growth, particularly industrial growth, of the developing countries as a group. The inferences from the United Nations figures given above are reinforced by the IBRD figures. Furthermore, a study by Dell & Lawrence (1980) found that increased import quantities accounted for 41% of the cases of deterioration on the LDC trade account between 1962-1973. Increased import prices, on the other hand, accounted for 8% of such cases. They conclude that these figures are consistent with "..... the development process as well as ..... short run problems of demand management" (p12).

It is, therefore, reasonably clear that throughout this period the growth aspirations of the developing countries as a group were at least partially achieved particularly by export growth and import substitution

through industrialisation. Given the assumption of a positive marginal propensity to import and that many of the capital inputs to the industrialisation process have had to be imported, even partial achievement of the growth objective would, ceteris paribus, cause a deterioration in the balance of payments on current account.

Impact of Increased Oil Prices

The change in the relative price of oil since 1973 has made it necessary, with any analysis of the developing countries, to divide the whole group into oil exporters and non oil exporters. The oil exporters have for the majority of years since 1973 been net exporters of financial capital, whereas the non oil exporters have needed to import such capital.

The following figures, again from United Nations sources, give the index of unit value, 1970 = 100, for energy exports by developing countries to other developing countries. As all the OPEC countries are classified as developing, these indices reflect oil exporting countries' exports to non oil exporting developing countries (NOLDCs). The value of such exports is given in parenthesis for each year.

Table 1.7 Index of oil exports to NOLDCs

1968	97	(3.15)	1975	603	(26.26)
1969	98	(3.21)	1976	643	(32.13)
1970	100	(3.92)	1977	701	(36.41)
1971	126	(4.98)	1978	703	(33.42)
1972	135	(5.49)	1979	990	(50.72)
1973	185	(8.67)	1980	1640	(75.09)
1974	571	(26.41)			

Source: United Nations Statistical Yearbook 1981 p45
Figures in parenthesis in billions US $

The increased price of oil after 1973 affected the developing countries' balance of payment not only through their energy imports but through all their imports because of the energy content. Nevertheless, the greatest price rises in non energy imports were to be seen in the manufactured imports which are energy intensive and most of these are imported from the developed countries.

The Impact of Oil Induced Recession in OECD Countries

The oil price rises of 1973-74 and 1979 also affected the NOLDCs balance of payments in an indirect way by inducing a recession in the developed economies. This reduced the demand for NOLDCs exports by the developed countries.

The following United Nations figures show the value of total exports excluding fuel from the developing economies to the developed market economies.

Table 1.8 LDC exports (less fuel) to developed market economies

1970	26.47	1975	54.86
1971	26.56	1976	70.26
1972	31.96	1977	81.45
1973	46.32	1978	93.46
1974	59.42	1979	115.04
		1980	129.49

Source: United Nations Yearbook 1981 p44
Figures in billions US $ FOB

These figures reflect the drop in exports from NOLDCs which coincides with the 1975 recession in the developed world if we accept the crude assumption that all non fuel exports of developing countries come from NOPEC countries.

We can now summarise this section by saying that the need for increased financial flows to the non oil exporting developing countries during the 1970's was caused by their balance of payments disequilibria. These in turn were caused by:

a) Aspirations of growth and a policy of import substitution throughout the period.

b) The increased price of oil, particularly after 1973, exacerbated the disequilibria. Given that the costs of adjustment would be so great, even larger flows of financial resources were required.

c) The oil induced recession in the developed economies during 1974-75 and after 1979 also contributed to the deterioration of the NOLDC balance of payments. Given their growth policies, these countries had to borrow the foreign exchange required to cover these deficits.

1.4 Why did the Developing Countries turn to the Private Financial Markets?

The private financial markets did not suddenly find a new set of customers in 1970. These markets had been providing some finance to the developing countries on an increasing, though small, scale during the 1950's and 1960's. Many of the banking techniques had their genesis in the 1960's. What was different in the '70's compared with earlier periods was the dominance of private sector debt creating flows over official flows and direct investment to the developing countries.

Given that the private markets and the techniques were in existence before 1970, it is reasonable to suggest that after 1970 these markets and techniques were a more desirable source of finance compared with the official sources because of the declining desirability and availability of the latter. We can therefore answer the question of why the developing countries turned so convincingly to the private markets by investigating the reasons for the declining desirability and relative availability of the official financial flows.

We will begin by analysing the role of the IMF and then look at the role of the World Bank and of Bilateral Aid.

The International Monetary Fund

The aim of this institution is to provide temporary finance to members in order to finance their balance of payments disequilibria.

Each member of the Fund contributes its 'quota', of which before 1976 25% was in gold or US dollars and 75% in its own currency. Since 1975 the contributions can be completely in the member's own currency. The size of a member's quota has an influence over the amount of finance that can be obtained from the IMF because quantitative limitations on assistance are stated in terms of multiples of a member's quota.

Much debate about the availability of assistance from the Fund centres upon the conditionality attached to any such assistance, (Bird

1979, 1982, Pirzio-Birote 1983, Buira 1983). However, it is not intended to discuss IMF conditionality in any detail in this thesis because, as will be shown below, the overwhelming constraint upon the maximum amount of assistance that the Fund could give to the LDCs has been the resources available to the Fund.

It is shown below that even if no conditions were attached to IMF assistance, save for the regulation regarding maximum quota multiples, and that NOLDCs drew their maximum entitlement, this entitlement would be an increasingly inadequate form of quantitative assistance as the 1970's progressed.

The Quantity of Funds Available from the IMF

The resources which the Fund can make available come from members' subscriptions and from borrowed resources. Members' subscriptions are determined in accordance with the same quotas allocated to each member which in turn influence a member's access to Fund resources and voting power.

The Articles of Agreement of the Fund provide for a general review of quotas every five years. The fifth general review of quotas took place in 1969 and a 35.5% increase in all quotas was agreed for 1970. The total value of quotas for all members as at 30 April 1971 was SDR 28478 million which represented 8.2% of the total value of international trade. The total value of quotas increased to SDR 39000 million by April 1980 which represented 4% of international trade. The sixth general review of quotas in 1976 doubled the quota share of oil exporting countries from 4.98% to 9.88%, whilst keeping the collective share of developing countries to 20.92%. Bearing in mind that quotas influence the total amount of finance that can be obtained from the Fund, such action seems to be of little help to the NOLDCs, (IMF 1981 p80).

The Fund grants facilities under four accounts; The General Account, The Subsidy Account, The Trust Fund and The SDR Account.

Under the General Account for the period 1970-1980 the Fund made resources available under the following facilities:-

- Ordinary drawings and standby arrangements
- The Extended Fund Facility
- The Supplementary Financing Facility
- The Compensatory Financing Facility
- The Buffer Stock Financing Facility
- The Oil Facilities of 1974 and 1975

Ordinary drawings are available up to 125% of a member's quota. This amount is available in five 25% tranches, the first being known as the reserve tranche, the second as the first credit tranche and the last three being known as the upper credit tranches.

The reserve tranche is made available unconditionally. The first credit tranche is made available to any member regarded as making 'reasonable efforts' to solve its balance of payments problems, but in practice is virtually automatic (ODI 1980). The upper credit tranches are granted only after substantial justification; the higher the tranche, the more exacting are the criteria for justification. These funds have normally been granted under a one year (but recently three year) standby agreement in support of a stabilisation programme agreed with the Fund. Access to these funds is by instalments and can be withdrawn if the performance criteria are not met.

It is the agreement of the performance criteria and the compliance with the stabilisation programme agreed with the Fund that constitute the conditionality associated with the ordinary drawings from the Fund.

The Extended Fund Facility The aim of this facility, established in 1974, is for the IMF to provide a facility whereby the developing countries could obtain resources but with longer repayment periods than

applied to normal drawings from the Fund.

The repayment period was originally up to eight years but in 1979 was extended to ten years so this facility is very much one of medium term finance. Drawings may be made over a three year period and may reach a maximum of 140% of the member's quota with the proviso that ordinary drawings and Extended Fund drawings must not exceed 265% of a member's quota.

Again, there is a degree of conditionality attached to this facility that is comparable with facilities under the upper credit tranches. The member is expected to present an economic programme setting the policies and objectives for the duration of the facility. Drawings are by instalment so that the granting of instalments can depend upon satisfactory execution of stages of the agreed programme.

The Supplementary Financing Facility became operational in February 1979 and provides funds under standby or extended arrangements. These funds are made available from resources that the Fund obtains by borrowing from members specifically for supplementary financing. They are in addition to those provided under other facilities.

The Fund will grant the facility if:-

a) The member needs finance from the Fund that exceeds the four credit tranches, and its problems require a relatively long period of adjustment. The repurchase period is 3½-7 years.

b) The member will follow policies that are compatible with the Fund's policies on the use of resources in the upper credit tranches or extended fund facility.

Until June 1980 a member could draw 300% of its quota under this facility. At that date access was reduced to 200% of quota.

The Compensatory Financing Facility was established in 1963 to provide compensatory finance to members suffering temporary shortfall in export earnings.

The original terms of this facility were liberalised in 1965 when limits upon drawings were increased to 50% of a member's quota subject to the constraint that drawings should not exceed 25% of quota in any one year. The second 25% was only to be granted if the member was pursuing policies reasonably conducive to the development of its exports. Repayments were expected to be made within three to five years.

These arrangements were again liberalised in 1975 when the overall limit was increased to 75% (liberalised to 100% in 1979) of a member's quota with annual permitted drawings increasing to 50% - or even 75% in the case of a disaster (limit abolished in 1979).

The benefits which developing countries can obtain from this facility depend not only on the maximum amount available but also on the way in which the Fund calculates the export shortfall. The Fund considers a shortfall to exist when export earnings for a year fall below what they would have been if price and output were both normal in terms of a five year trend centred upon the shortfall year. However, the Fund retains considerable discretion in evaluating shortfalls. Therefore the bargaining strength of the member and its export performance in the two years prior to the shortfall year influence the benefits which the member may gain from this facility. As the trend calculation includes the shortfall year, the trend and thus the starting point for negotiation will be biased downwards. Until 1975 the trend was also biased downwards because assumed export growth was limited to 3% when in fact nominal export growth was far in excess of

that figure (Bird 1978).

Other criticisms of this facility centre upon its short term nature with repayments due within three to five years when there is little evidence to suggest the developing countries can cure their balance of payments problems within that time period since they are often structural in nature. Furthermore, the facility was originally only available to finance shortfalls in export earnings when in fact a major cause of a deficit on the balance of payments may be increased prices of imports and an inelastic demand for those goods. In 1981 the facility was extended to cover increased costs of cereal imports.

The Buffer Stock Financing Facility assists members having difficulty financing their share of agreed international buffer stock schemes. Credit up to 50% of quota is allowed but this facility has been little used since its inception in 1969.

This facility is subject to the following conditions:-

- Finance can only be provided to individual members participating in buffer stock schemes and not to the international bodies controlling such schemes.
- Finance is available only to members experiencing balance of payments difficulties due to their contributions to the buffer stock scheme.
- Drawings must be repaid within three to five years.
- The member country must agree to cooperate with the Fund to find solutions to its balance of payments difficulties.
- The buffer stock scheme must be of a form approved by the Fund.

The Oil Facilities of 1974 and 1975 were financed by means of borrowings from members. The aim of the 1974 facility was to provide finance based upon the difference between the cost of net petroleum and petroleum product imports in 1974 and 1972. Such finance could not

exceed 75% of a member's quota.

The 1975 facility was limited to 125% of a member's quota, or 85% of the increased cost of petroleum and petroleum-based imports, whichever was the lower. The conditionality of the 1975 facility was stricter than for the 1974 facility in that balance of payments policies and energy conservation and substitution policies were formally assessed.

Funds had to be repaid within three to seven years under both facilities. A rate of interest of seven per cent for 1974 and seven and threequarter per cent for 1975 was applied.

The figures below show the use that has been made of the Oil Facilities:

1974 Oil Facility	
All countries	2499.251
of which Developing Countries	1029.651
1975 Oil Facility	
All countries	3966.237
of which Developing Countries	1334.977

Figures in millions SDRs

The Subsidy Account

In an attempt to reduce the debt burden of the interest rates on the Oil Facility, the Fund established a Subsidy Account. This was to be used to provide financial assistance to the poorest developing countries which had suffered most through increases in oil prices. Payments under this account began in May 1976. The most needy developing countries were defined as those with a per capita income of less than US $400 per annum and who face severe balance of payments problems on the basis of projected import and export performance.

Table 1.9

The Subsidy Account

1976	13.82
1977	27.51
1978	24.95
1979	19.10
1980	13.79

Figures in millions SDR

It can be seen that the lion's share of the oil facilities went to the developed countries with Italy being the largest borrower under the 1974 facility, and the United Kingdom the biggest borrower under the 1975 facility. However, all benefits under the Subsidy Account have gone to the poorest developing countries.

The Trust Fund

The IMF announced in 1976 the establishment of a Trust Fund in order to provide certain eligible developing countries with balance of payments finance, which, although conditional, is granted at concessionary rates.

Gold sales, loans and voluntary subscriptions are the sources of funds from which the finance will be made available to those countries eligible to receive it.

These funds are made available only to poorest developing countries and only if the member has provided the Fund with an acceptable economic programme in respect of another facility of the Fund. The criteria for assessing the acceptability of such a programme are similar to a first credit tranche proposal and therefore not very severe. The interest rate on this facility is 0.5% per annum.

Repayments of Trust Fund loans have to be made no later than 6-10 years after the date of disbursement.

It can be seen that the advantages of the Trust Fund loans to the poorest countries lie in the concessionary rate of interest, long repayment period and the fact that these funds are additional to those available from other facilities of the Fund.

Up to June 1978 disbursements under the Trust Fund totalled SDR 840.968 million. From June 1978 to end 1980 disbursements totalled SDR 1257.191 million, making total disbursements of SDR 2098.159.

In addition to the Trust Fund, some of the developing countries have benefitted from the IMF's gold sales by a direct contribution of a proportion of the profits. Profits from the 25 million ounces sold to the public amounted to US $4.6 billion, of which US $1.3 billion was distributed directly to 104 developing countries. These distributions were made on the basis of each recipient's quota as at 31 December 1975. Some developing country members who would have been eligible to receive such distributions contributed their share to the Trust Fund. These members were mainly members of OPEC.

Special Drawing Rights

Special Drawing Rights are an international form of outside money being issued by the Fund and not being backed by debt. They were first issued in 1970 with subsequent issues in 1971, 1972 and 1980. About 9500 million SDRs were issued to members in accordance with their quotas. The use of SDRs by members is unconditional save for a rule that their holdings should not drop below 30% (15% after 1.1.79) of allocation over a period of five years.

SDRs were primarily designed to meet balance of payments needs but other members need not accept SDRs in settlement of international indebtedness in excess of three times their cumulative allocation. Transfers between members take the form of book entries in the IMF's Special Account and do not result in the reduction in the number of SDRs in existence.

The developing countries, in common with other Fund members, derive benefits from the allocation of SDRs in the following ways:

1) By adding to reserves they save the opportunity cost of alternative forms of acquiring reserves.
2) They economise on foreign exchange reserves since they can be used to pay off debts with the IMF.
3) By exchanging SDRs for foreign currency, real goods and services may be acquired.
4) As a form of finance benefits may be derived from the greater economic activity which a more plentiful medium of exchange permits.

Given that SDRs are distributed in proportion to members' quotas, it is clear that the distribution of benefits derived from each initial allocation will have the same shortcomings as the quota system. In particular the gift of new unconditional reserves is received in greater proportion by the rich countries, who have the largest stocks of reserves and therefore need free gifts least. Furthermore, by granting largely unconditional SDRs in the same proportion to members' access to conditional finance, the Fund has not altered the balance of conditionality in its facilities.

The following table shows the original total allocations of SDRs to all IMF members and to developing country members.

Table 1.10 The allocation of SDRs to IMF members

	All members	Developing country members
1970	3414.0	935.8
1971	2949.2	787.4
1972	2951.5	921.4
1973-1979	Zero	Zero
1980	4033.27	1551.97

SDRs billions

Bearing in mind that interest is paid by members to the Fund if they are net users of SDR, the potential real resource gain is equal to the allocation of SDRs minus the interest payable. Obviously the realised resource gain depends upon the extent to which the SDRs are utilised.

Below is a summary of the actual drawings made by NOLDCs from the various Fund facilities during the period 1970-1980. It does not take account of any repurchases that those members have made during the period nor the issue of SDRs.

Table 1.11

Actual Drawings by Non Oil Exporting LDCs 1970-1980

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Reserve Tranche	159.65	98.43	178.22	68.17	329.07	359.07	212.5	30.67	100.66	98.01	359.13
Ordinary Credit Tranches	273.36	295.78	339.57	228.52	564.57	335.18	777.63	555.28	421.04	647.71	855.46
Compensatory Finance Facility	2.5	69.48	299.45	113.45	107.15	188.5	1863.06	240.5	478.95	571.95	980.42
Buffer Stock Financing Facility		11.80	6.43			4.66			36.08	13.89	
Oil Facility					939.67	1579.4	891.83				
Extended Fund Facility						7.7	90.0	208.75	174.0	131.53	339.29
Supplementary Finance Facility										205.4	943.1
Extended Fund under SFF										101.48	275.24
Total General A/c Drawings	435.51	475.49	823.67	410.14	1940.46	2474.51	3835.02	1035.2	1219.74	1769.97	3752.64
Trust Fund								153.0	688	527	1256
Total Drawings	435.51	475.49	823.67	410.14	1940.46	2474.51	3835.02	1188.2	1907.74	2296.97	5008.64

Sources: Private communication with IMF & Bank of England Quarterly Bulletin December 1983 p555

The table below shows the percentage of a member's quota that is available under each of the General Account facilities for the years 1970 and 1974-80 inclusive. This table also gives the aggregate value of quotas of NOLDCs and the maximum amount of funds available to that group of developing countries in each year. This maximum amount available is the maximum multiple of a member's quota, all members being treated equally in this respect, multiplied by the aggregate quotas of the NOLDCs.

Table 1.12 Maximum availability of IMF funds

	1970	1974	1975	1976	1977	1978	1979	1980
Ordinary Drawings:								
% of Quota								
Reserve Tranche	25	25	25	25	25	25	25	25
Credit Tranches	100	100	100	145	145	145	100	100
Extended Fund Facility	-	140	140	140	140	140	140	140
Supplementary Finance Facility	-	-	-	-	-	-	300	300
Compensatory Finance Facility	50	50	75	75	75	75	100	100
Buffer Stock Finance Facility	50	50	50	50	50	50	50	50
Oil Facility	-	75	125	-	-	-	-	-
	225	440	515	435	435	435	715	715
Aggregate Quotas of NOLDCs	4.67	4.67	4.67	4.29	4.29	4.29	4.29	4.29
Total Assistance for NOLDCs Available from General A/c	10.51	20.5	24.1	20.3	20.3	18.66	30.7	30.7
NOLDC BofP Deficits in SDRs	8.6	30.12	39.2	28.36	23.6	28.8	43.6	64.6
Actual Amounts Drawn including Trust Fund	0.43	1.94	2.4	3.8	1.19	1.90	2.30	5.01

Value Figures in billions SDRs

Clearly the maximum amount available from the General Account of the Fund for the NOLDCs has become increasingly inadequate. This is particularly so when it is realised that the maximum amounts quoted above overestimate the actual amount available to that group of members if any such members are not in deficit. This is because members not needing the Fund's assistance cannot transfer their quotas to other members.

Despite the fact that aggregate NOLDC deficits were greater than aggregate NOLDC quotas and despite the fact that the financial terms of Fund assistance were softer than those on market finance, actual drawings were below permitted drawings throughout this period. One reason for this is the non financial conditionality attached to most Fund assistance. However, it is abundantly clear that whatever the effects of conditionality may be on the demand for Fund assistance, the availability of finance must be the biggest constraint upon that assistance.

There is circumstantial evidence that conditionality has reduced the demand for Fund assistance from NOLDCs. This evidence comes from the considerably increased use of individual facilities when the conditionality attached to those facilities is relaxed. Examples are the increased use of the Compensatory Finance Facility after its liberalisation in 1975 and again in 1979. A further example is increased use of the Extended Fund Facility in 1980 following the extension of the repayment period from eight to ten years in 1979.

The costs and benefits of IMF conditionality must be evaluated within the context of the quantity of funds available. Why should a member wish to suffer the costs of conditionality when the amount of Fund assistance is relatively small and there are other sources of unconditional finance available?

The willingness to accept conditionality during much of the 1970's and early 1980's must have been influenced by the availability of

relatively abundant unconditional finance. Thus, for some countries with access to bank finance, there was no need to accept conditional Fund assistance which, in any case, was by itself grossly inadequate (Financial Times 18.6.82). However, at the time of writing, much of this bank finance has become vicariously conditional in the sense that increasing proportions of new private finance are dependent upon the successful negotiation of, and compliance with, the terms of IMF facilities. Thus, at the time of writing (end 1983), Fund conditionality may be more acceptable to borrowers because the costs of not accepting conditionality are not those of foregoing a small amount of external finance but instead foregoing all or a major proportion of such finance.

To summarise this section, we may say that throughout the 1970's the resources available from the IMF were inadequate to finance NOLDC balance of payments deficits and these countries therefore turned to the private banks for assistance. The inadequacy of IMF funds was exacerbated by the conditionality attached to some of those funds.

The International Bank for Reconstruction and Development

Established as a sister institution of the IMF in 1944, the IBRD has as its function the financing of economic development amongst its poorer members. The Bank obtains the finance for its operations from the sale of its debt obligations to private investors, governments and their instrumentalities. The Bank's capital, which is subscribed to by its 128 member countries, its retained earnings, and the flow of repayments on its loans, substantially contribute to the Bank's resources (Cherniavsky 1977). In fact, only 10% of authorised capital is subscribed, 90% being held as a guarantee of the Bank's operations.

A quantitative constraint is that the total amount of loans or guarantees must not exceed the Bank's capital and reserves.

The Bank generally provides project finance, that is, loans made in respect of particular projects, and can only be disbursed in relation to the approved project. Bank finance is usually limited to the foreign exchange content of a project and repayment must be guaranteed by the government of the country in which the project is located.

The rate of interest to be charged quarterly on Bank loans is calculated by adding 0.5% to the weighted average cost of the Bank's borrowed funds (weighted by amount and maturity) over the previous twelve months and then applied for the next quarter.

This method of calculating the interest charge meant that loans were made at commercial rates and therefore contained little, if any, aid. There was also criticism in that the requirement of a government guarantee has deterred private firms from seeking finance for development projects.

To counter these criticisms the IBRD established two subsidiary institutions.

In 1956 the International Finance Corporation was set up in order to provide finance for up to 50% of a private sector project. No government guarantee is required and the IFC will not invest in projects controlled or owned by governments. The aim is that the IFC sells off its stake when the project is viable in order to re-use its resources elsewhere.

In 1960 it established the International Development Association. The objective was to provide loans on softer terms than Bank loans to finance projects in the poorer developing countries.

Finance for the IDA and IFC comes from the reserves - retained past profits - of the IBRD as well as subscriptions by the 21 members who are industrialised and highly developed.

In 1975 the Bank established the Intermediate Financing Facility or The Third Window. This facility was to provide finance on terms intermediate between the Bank and the IDA. The idea was to subsidise the rate of interest of Bank loans by four per cent per annum, but only on

loans to the poorest members, ie those with a per capita income of less than US $375 in 1972. This facility effectively only lasted for one year. The Third Window was expected to lend up to $1000 million in 1976 but much less was lent because the Bank could not raise sufficient funds from its members. Hurni (1980) attributes this to aid weariness amongst the Bank's creditor members.

In order to provide for the subsidy, a Subsidy Fund was established; its resources came from certain members of the Bank and Switzerland on a voluntary basis (IBRD 1976).

During the 1970's there was a shift of emphasis in World Bank lending. The traditional projects that the Bank supported were typically infra-structure projects with long gestation periods and only indirectly earning foreign exchange. The shift in emphasis was towards poverty-orientated projects. As an indication of the relative importance of this shift, whereas 22% of lending between 1969-73 went to agriculture, 52% of lending went to agriculture during 1974-78 and in 1977 57% of agricultural lending went to 'poverty-orientated' projects.

The table below shows the total amounts lent by IBRD, IDA and IFC from 1970 to 1980.

Table 1.13 Annual lending of IBRD, IDA and IFC 1970-1980

	IBRD	Of which Third Window		IDA		IFC
1970	1580	-	(754)	606	(143)	112
1971	1921	-	(915)	584	(235)	101
1972	1966	-	(1182)	1000	(261)	116
1973	2051	-	(1180)	1357	(493)	147
1974	3218	-	(1533)	1095	(711)	203
1975	4320	-	(1995)	1576	(1026)	212
1976	4977	478	(2470)	1655	(1252)	245
1977	5759	-	(2636)	1308	(1298)	259
1978	6098	-	(2787)	2313	(1072)	338
1979	6989	-	(3602)	3022	(1222)	425
1980	7644	-	(4363)	3838	(1411)	681

Source: IBRD Annual Report, various issues
Figures in million US $
Figures in parenthesis are the actual disbursements in each year

Criticism of the World Bank Group's facilities are related to the cost, the quantity available and the small size of any programme lending.

In relation to cost, the establishment of the IDA and the Intermediate Financing Facility goes some way to mitigate this problem.

With regard to programme lending, the Bank's Articles of Agreement state that "loans made or guaranteed by the Bank shall, except in special circumstances, be for the purpose of specific projects of reconstruction and development", (IBRD 1977). These special circumstances have changed several times during the Bank's existence. Since 1977 they have included the following:

1) Reconstruction and rehabilitation of the economy after a war or severe national calamity.

2) Demand for industrial raw materials or equipment to raise the use of existing industrial capacity.

3) A sudden fall in export earnings, where the economy is critically dependent on a single export item.

4) A sharp deterioration in the terms of trade as a result of a rapid rise in import prices.

Until 1970 the Bank and the IDA provided about 10% of their loans as programme loans. From 1971 to 1974 that figure fluctuated between 4% and 7%, increasing sharply in 1975 to 9% and declining again to 2.3% in 1977. The 1977 Annual Report of the Bank suggested that a figure of 7-10% was considered a reasonable commitment to programme lending in the future.

Turning now to the quantity of assistance available to members, this is not so much restricted by the members' contributions but by the overall quantity of funds available to the Bank. The Bank's loanable funds in any one year will depend in the main upon interest and amortization receipts and borrowings. However, the overriding legalistic constraint on the Bank's lending will be the regulation that total loans must not exceed the sum of the Bank's subscribed capital and its reserves. Nevertheless, figures below show that this regulation did not constrain the Bank's activities during the 1970's. There have been several replenishments of the capital stock during the Bank's existence but because these replenishments do not earn an income for the member governments such contributions are akin to aid. As such they are constrained by the political will of the members, particularly the developed country members, in granting additional aid.

The table below shows the extent to which Bank lending has been constrained by the level of capital and reserves.

Table 1.14 Capital & reserves and loans outstanding of IBRD 1970-1980

	Total Capital & Reserves	Total loans granted	Disbursed outstanding	Undisbursed amounts
1970	24879	8889	5963	2926
1971	25315	9980	6586	3394
1972	28202	11952	785	4095
1973	32147	14628	967	4955
1974	32203	16632	10489	6143
1975	32723	19863	12188	7675
1976	32777	22741	13527	9214
1977	32895	27034	1572	11308
1978	35290	33065	19359	13706
1979	39927	39137	22874	16263
1980	42852	44804	26694	18110

Source: IBRD Annual Report, various issues
Figures in millions US $

It can be seen that at no time did the amount disbursed outstanding come close to being constrained by the Bank's lending capacity. Yet despite this unused capacity, demand for credit from private sources grew substantially.

This last point may give a clue as to why greater use has not been made of IBRD facilities. A considerable amount of borrowing by the non oil developing countries from the private sector has not been tied to projects but is in effect programme borrowing. In particular, some borrowing has been undertaken specifically to finance balance of payments deficits.

It may very well be, therefore, that the relatively small role played by the World Bank Group in providing finance to the developing countries results from the terms and conditions attached to such finance.

The fact that the Bank has limited the amount of programme finance it makes available means that the supply of loans is likely to be channelled to those countries where project investment possibilities are greatest.

The following figures show outstanding loans as at 31 December 1980 aggregated by income groups:

Upper Middle Income	1,068,635
Intermediate Middle Income	26,548,411
Lower Middle Income	14,379,381
Low	2,771,246

Source: calculated from IBRD prospectus 27.4.81
Figures in thousands US $

It is notable that this distribution of loans is similar to that of eurocurrency syndicated loans where commercial criteria can be expected to apply. It may be therefore that the Bank's insistence on creditworthiness in the projects that it finances and its lack of interest in programme finance have combined to limit the attractiveness of World Bank finance to developing countries. It must be remembered that the above distribution relates to loans from IBRD; IDA loans, which are on softer terms, all go to the poorer members of the World Bank.

Bilateral Aid Flows

The major aid donors during the 1970's have been the DAC members of OECD and OPEC countries, with small contributions being made by the centrally planned economies of Europe and China.

During the 1970's there were two targets for aid flows donated by members of the United Nations. The first target was embodied in the Development Strategy for the Second UN Development Decade (1971-1980). This called for Net Official Development Assistance to be at least 0.7% of GNP at market prices of the donor country. The second target was that adopted by UNCTAD II in 1968 which calls for all financial flows, both private and official, to represent at least 1% of GNP.

The following figures show the net flows of aid from various groups of donors. In nominal terms these flows have increased by 350% in eleven years; bilateral aid growth being slightly slower than multilateral aid.

Table 1.15 Net flows of aid to developing countries by group of donor

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Official Development Assistance	8.08	9.36	10.06	12.43	16.46	20.09	19.65	20.36	27.22	30.61	36.36
Bilateral											
a) DAC countries	5.66	6.33	6.63	7.09	8.23	9.81	9.50	10.08	13.12	15.91	18.02
b) OPEC countries	0.39	0.44	0.66	2.03	4.15	5.68	5.17	4.28	6.90	6.58	8.26
c) CMEA countries	0.96	1.26	1.38	1.35	1.26	0.73	1.05	1.09	1.20	1.80	2.14
d) Other countries						0.03	0.06	0.08	0.10	0.12	0.20
Multilateral agencies	1.07	1.33	1.39	1.96	2.82	3.84	3.87	4.83	6.00	6.20	7.74
Of which: OPEC financed	-	-	-	-	0.12	0.16	0.42	1.23	0.96	0.26	0.29

Source: OECD DAC Review 1982, p51

Billions US $ current prices

However, the same source (page 52) shows that in real terms (1981 prices) aid increased by only 75% over that same period.

Comparing these figures with those for balance of payments deficits on page 21 above it is clear that aid receipts by LDCs as a group became an increasingly inadequate source of finance as the decade progressed.

OECD figures given in Table 1.1 above show that 97.4% of ODA in 1978 went to non OPEC LDCs. Thus, even if we make the assumption that OPEC countries therefore received very low ODA payments during the whole of the decade, ODA receipts by non OPEC LDCs were still unable to finance the balance of payments deficit.

Reasons for Increased Private Flows : A Summary

Having analysed the official sources of external finance, we can now summarise the reasons for the developing countries turning to the private financial markets as:

1) Inadequate rate of growth of funds from official sources.

2) Conditionality applied to funds from official sources. In particular, the terms attached to IMF facilities and the tying of aid made private unconditional credit preferable despite its higher cost.

3) The relative lack of flexibility of the facilities from official sources made the flexibility of the eurocurrency syndicated loans market particularly attractive. In this respect the small level of programme lending by the IBRD is to be noted.

1.5 The Impact of Increased Privatisation of Sources of Finance

The shift in emphasis towards private sources of finance may be expected to change the level of benefit which the developing countries receive from their aggregate financial flows. In particular, because private flows will be motivated by commercial criteria whereas official flows may be expected to be, to some extent, motivated by altruism, the shift towards private finance will mean harder financial terms. These terms will be manifested in a combination of higher interest rates, shorter grace periods and shorter maturities to loans.

In order to analyse the effects of the change in financial terms, it is first necessary to ascertain how the debt disbursement was distributed amongst recipients for each type of financial flow. With knowledge of this distribution and of the different financial terms attached to each, some indication of the changing financial costs to the developing countries will be possible.

One particularly important question in this regard is the extent to which the changing financial terms affect the developing countries' future growth by laying prior claim to future foreign exchange resources, these resources being used for debt servicing instead of investment.

The Distribution of Financial Flows by Source and Recipient

In what has been said so far the developing countries have been divided into two groups. One group is the oil exporting group which, because of their balance of payments surpluses, particularly since 1973, have also been net exporters of financial capital. The second group is the non oil exporting developing countries which, as a group, are net importers of financial capital. However, to treat this latter group as homogeneous obscures many interesting details about the benefits they gain from international financial flows.

In this section we follow the practice of the IBRD and divide all developing countries into the following groups:

Upper Middle Income ie countries with a per capita GNP of US $3000-6999 in 1978.

Intermediate Middle Income ie countries with a per capita GNP of US $700-2999 in 1978.

Lower Middle Income ie countries with a per capita GNP of US $300-699 in 1978.

Low Income countries ie those countries with a per capita GNP of less than US $300 in 1978.

The following table shows the ratio of amortization payments to outstanding disbursed debt and the ratio of interest payments to outstanding disbursed debt. Values of both ratios are given for 1973 and 1979 so that comparison can be made. These ratios were calculated from data extracted from the IBRD World Debt Tables.

The amortization ratio shows the proportion of total debt being amortized each year. If the ratio rises the residual maturities and grace periods on existing debt are shortening or those variables on new debt are getting shorter. In the extreme, a bunching of maturities in a given time period will lead to a dramatic rise in this ratio.

The interest ratio shows the relationship between interest payments and debt outstanding. If this ratio rises over time, then it indicates that interest rates on marginal loans, or in the case of floating rate loans intramarginal loans, are rising. Thus again the higher ratio means harder financial terms.

In effect these two ratios decompose the ratio of total debt service payments to debt outstanding. This is considered to be worthwhile because it enables the highlighting of the influence of changes in interest rates - often caused by money market conditions - and changes in grace periods and maturities which may be influenced by risk and competitive factors.

Table 1.16

Comparison of interest and amortization ratios between different income groups of borrowers and between sources of funds

		Government		International Organisations		Financial Institutions		Bonds		Suppliers	
		1973	1979	1973	1979	1973	1979	1973	1979	1973	1979
Upper Middle Income	Interest / Debt	4.2	4.2	6.6	8.6	7.0	10.1	2.5	4.8	5.5	7.6
	Amortization / Debt	7.1	5.9	6.4	8.8	18.5	10.6	4.4	5.5	18.4	29.0
Intermediate Middle Income	Interest / Debt	2.6	3.7	6.2	7.4	5.4	8.7	7.2	7.6	6.3	6.9
	Amortization / Debt	5.6	8.2	4.6	4.3	11.6	15.3	15.4	7.3	17.0	21.8
Lower Middle Income	Interest / Debt	2.2	2.9	5.1	4.7	4.4	8.2	4.5	5.2	2.3	5.9
	Amortization / Debt	5.8	4.0	4.2	2.4	21.4	14.8	21.4	14.8	21.0	30.4
Low Income	Interest / Debt	1.9	2.1	2.6	2.2	5.4	4.4	6.1	5.3	4.1	3.5
	Amortization / Debt	2.8	3.2	2.6	1.6	10.9	5.7	17.5	2.1	15.9	12.0

Calculated from IBRD World Debt Tables, various issues

These figures show that generally the interest to debt ratio has increased over the period reflecting the secular increase in interest rates during the 1970's. The greatest increase in the ratio is found in loans from the financial institutions, the smallest increases coming from bonds. However, this latter point may reflect the relatively small use that has been made of the international bond markets by the developing countries.

One reason why the interest to debt ratio has risen for loans from financial institutions is that many of these loans are tied to floating rates of interest, therefore both marginal and intra-marginal loans reflect the secular increase in interest rates during the 1970's.

Although the interest burden has risen during the 1970's the change in the burden of amortization is less obvious. For loans from financial institutions the burden appears to have fallen for all groups except the intermediate middle income borrowers. However, although data in appendix II show amortization rising faster than disbursements during 1978 and 1979, this is due to the considerable increase in debt refinancing that occurred during that period. This effectively extended the maturities and grace periods.

Clearly then, the increase in the relative share of private finance in total finance has raised the interest servicing burden but reduced the amortization burden. However, see chapter five, page 236 below re short term debt.

One interesting point is that although one may expect the interest and amortization commitments on official finance to be lower on low income - although high risk - borrowers compared with high income borrowers, we find that the same applies to the private sources except for bonds. We might expect such a situation on official finance because commercial - particularly risk - criteria may not be dominant in assessing loan applications. However, we would not expect such a situation with private credit because we expect risk criteria to be dominant in private assessment of loan applications.

One explanation of this may be that lower income countries have only recently gained access to the private sources of finance on any scale. Where loans are made to these poorest borrowers official export credit insurance with its attendant subsidised fixed rate bank loans, will be proportionately more important. Thus the impact of rising interest rates is reduced for these borrowers.

Turning now to data on the actual flows of funds to the developing countries given in Appendix II, we use the concept of net transfer to make comparisons between the sources of flows and between the destinations of flows. The concept of net transfer is calculated as follows, following IBRD practice:

Disbursements - Amortization = Net flow

Net flow - Interest payments = Net transfer

This concept is used here in order to facilitate the comparison of flows from financial intermediaries with flows from other sources. However, below, under the section discussing recycling, we analyse the validity of this concept in relation to financial intermediaries.

These data on the net flow show the upper middle income group of countries receiving a rising net transfer from government sources but a declining net transfer from all other sources. This is despite the fact that government transfers could be made on altruistic grounds and therefore concessionary, in which case the concessions may be more appropriate to the poorer nations.

Intermediate middle income countries, on the other hand, have received over the decade a declining net transfer from governments, and a rising net transfer from all other sources. The financial institutions have been the most important source of these flows, being several times greater than the government and international organisations combined.

For the lower middle income countries, governments and

international institutions have been about equally important as sources of financial flows. The flow from the bond markets has been erratic and the flow from suppliers has declined since the mid 1970's. Funds from financial institutions have grown to be the most important form of finance.

Features of the flows to the low income countries include the negative net flow from the bond market and the relatively low flow from the financial institutions. The first factor is due to the fact that these countries have not tapped this market during the 1970's. The reasons for the infrequent use of the bond markets by LDCs are discussed in chapter eight of this thesis. The relatively low flow to these countries from the financial institutions is due, firstly, to the higher perceived risk which these countries offer to the lending institutions. The second reason is that the higher costs of private finance to these countries - to balance the higher risk - means that these countries cannot afford to tap the private markets due to their lack of concessionality.

It must also be remembered that the poorest countries do receive large portions of their external financial flows in the form of ODA. According to OECD figures (Review Economic Development 1980, Table IV-10), the least developed countries receive 85.2% of their external financial flows in the form of ODA and the low income countries generally receive 71.1% of such flows as ODA. Given that the proportion of ODA received in grant form during 1979 by these groups of countries is 94% and 90% respectively, the lack of access to private sources of credit for the poorest countries is to some extent mitigated (OECD Development Cooperation 1980, Table B2).

Note should be made of the erratic flows of supplier credit to all the developing countries. However, bank supplied buyer credit is highly substitutable for supplier credit. This is particularly so where such credit is supported by official export credit insurance. Such insurance

agencies have increasingly been used by western governments as instruments of export competition policy. This action could account for behaviour of supplier credit in that buyer credit supplied by banks in the supplier's country has been substituted for supplier credit.

To summarise the effects upon the developing countries of greater access to private sources of finance, we must note that:

- firstly, the financial borrowing costs have risen;
- secondly, the quantity of funds available has increased dramatically;
- thirdly, that the effective maturity structure of private debt has lengthened during the 1970's, particularly from financial institutions;
- fourthly, the distribution of access to private funds is not uniform across all developing countries. However, as the better-off developing countries have, and can afford, access to private sources of finance this means that the finance available from official sources can be spread more thickly amongst the poorer countries. These countries are therefore benefitting from a greater share of concessionary finance;
- fifthly, having said that, it must be remembered that the credit from private sources, particularly from financial institutions and bonds, is not evenly distributed amongst those countries that have access to such sources. A few developing countries take the lion's share of both bank loans and bond issues;
- sixthly, the increased financial costs of borrowing may not necessarily be an increased burden for the

borrower. If correct financial and social criteria are taken into account, the higher interest rates may not be detrimental to the borrower. However, to the extent that the higher interest rates are associated with higher inflation rates in the developed world, but the loan is used to finance a project that does not generate additional foreign exchange earnings, then servicing that loan in foreign currency may prove difficult. Nevertheless, this problem is really one of debt management and should not be attributed to the increased privatisation of debt per se.

The Recycling of Financial Flows

This topic has been much discussed in relation to the movement of funds from the oil exporting countries to the non oil exporting developing countries. However, as can be seen from the table on page 21 above, the years 1970-73 and 1978 required the recycling from the industrialised surplus countries as well, because the OPEC surpluses were smaller than the NOPEC deficits.

This recycling process is simply the manifestation of the role of international financial intermediation. Financial intermediaries borrow from sectors with surplus funds and lend to sectors with a financial deficit. In the process a liquidity transformation often takes place.

There are three major types of financial intermediaries involved in the recycling process, the Development Banks, the IMF and, most importantly, the Commercial Banks.

In this section it is intended to analyse the role of each of these intermediaries against the criteria of providing funds for the most needy developing countries.

The development banks are included because it is contended here that an analysis of the role of the commercial banks can only be made with a knowledge of their contribution to the resources of the development banks.

The Role of the Development Banks

Data for this analysis are taken from the World Bank Debt Tables. These show disbursed debt outstanding to international organisations by developing countries for 1979, as follows:

Upper middle income countries	1229.7
Intermediate middle income countries	18493.2
Lower middle income countries	11792.2
Low income countries	11725.2
TOTAL	43240.3

Millions US $

The term 'international organisations' includes the World Bank Group, regional development banks and other multilateral and intergovernmental agencies. However, the influence of the other multilateral and intergovernmental agencies was small eg World Bank Group alone accounted for US $32539 million (June 1979).

It can be seen that most money has been lent to the intermediate middle income group and least to the upper middle income group of countries, the two low income groups getting roughly equal shares.

In order to see how these flows represent genuine recycling, it is necessary to show the sources of funds to the international organisations.

Again, taking the World Bank as representative of all the

development banks, figures extracted from the Bank's annual reports for 1976-79 show that oil exporting countries lent the Bank US $305.5 million in 1976, US $179.5 million in 1977, US $40.1 million in 1978. The 1979 annual report does not specify any borrowings from oil exporters, although there are several borrowings from 'other' countries.

It can be seen that some, although modest, recycling from oil exporters to NOPEC developing countries has been achieved by the Bank. Nor must it be forgotten that in 1978 the oil exporters were actually in deficit, thus all developing countries as a group were in deficit to the developed countries. During the fiscal year 1979 the World Bank, according to its annual report, borrowed over 5 billion US $ equivalent of foreign currency, nearly all from the developed world. As disbursed loans increased by over US $3½ billion, the Bank actively recycled from the industrial countries to the developed countries during that period.

The evidence of recycling OPEC surpluses is less impressive. The following figures taken from a World Bank loan prospectus dated 24 April 1981 show Bank borrowings outstanding as at 30 June 1980.

Table 1.17 Currency classification of IBRD borrowings outstanding 30.6.80

Austrian Schillings	80.032
Belgian Francs	80.693
Canadian $	59.865
Deutsche Mark	8,809.726
French Francs	29.354
Italian Lira	47.369
Japanese Yen	4,133.684
Kuwaiti Dinars	278.937
Netherlands Guilders	426.657
Pounds Sterling	9.898
Saudi Arabian Riyals	150.164
Swedish Kronar	30.139
Swiss Francs	5,489.652
United Arab Emirate Dirhans	72.953
US Dollars	9,819.392
Venezuelian Bolivors	109.470
	29,729.319

Source: IBRD Prospectus dated 24.4.81
Figures US $ millions

Of the US $29,729.319 million equivalent only US $611.524 million was outstanding to oil exporting developing countries. These figures confirm the small role played by the World Bank in directly recycling surpluses from the oil exporters to the NOPEC countries. However, to the extent that financial institutions in the developed world subscribed to IBRD bonds with funds deposited by oil exporters, the World Bank is indirectly involved in recycling. These figures also obscure the subscription to IBRD bonds by financial institutions and individuals in the oil exporting countries which are made in the major currencies.

Considering the distribution of IBRD loans given above, it is reasonable to conclude that the recycling that does take place via these organisations is directed to the poorer two categories of developing countries.

The Role of the IMF

This institution acts as a financial intermediary in so far as it provides by way of loan (purchases) funds deposited by other members, either by way of a member's quota or extra funds under special facilities.

The Oil Facilities, the Trust Fund and the Supplementary Financing Facility to the extent that they are financed by borrowing, are examples of financial intermediation by the IMF. The General Agreements to Borrow are concluded between the Fund and ten industrial members plus Switzerland and as such do not directly represent recycling between the OPEC and NOPEC countries.

However, the Oil Facility and the Supplementary Financing Facility were both partly funded by OPEC members. To this extent, given that NOPEC members benefitted under both schemes, the Fund has been directly involved in recycling the OPEC surpluses. Two reservations must nevertheless be made. Firstly, the major beneficiaries under the Oil Facility have been developed country members. Secondly, although the Fund had commitments by members to lend it SDR 7784 million to fund the Supplementary Financing Facility, as at 30 April 1980 the Fund had only borrowed SDR 502.4 million. Thus, this recycling role has been very limited.

In fact in the 1980 annual report, the Fund states that it has supplemented its resources, by borrowing, by only SDR 9.9 billion in the six years to 1980. Given that some of these resources would have come from developed members and lent to developed members, the actual amount directly recycled to NOPEC members by the IMF during this period must be relatively very small.

The Role of the Commercial Banks

In order to establish the role of these banks in the recycling process, we can remind ourselves of the net transfer made by them to the

non oil developing countries.

Table 1.18 Net transfer by banks to developing countries 1973-79

	Upper Middle Income	Intermediate Middle Income	Lower Middle Income	Low Income
1973	207.8	3602.3	545.5	203.6
1974	1119.8	3914.6	1095.1	237.4
1975	1238.9	5925.4	2049.5	163.1
1976	1233.7	9123.8	1999.8	221.6
1977	1507.3	9396.7	1618.5	270.9
1978	-148.3	15073.0	1871.0	227.4
1979	-127.4	14390.5	2787.3	158.1

Calculated from IBRD World Debt Tables
Figures in millions US $

When analysing the distribution of financial flows between income groups, we noted that the concept of net transfer as calculated was not valid where the source of finance was both debtor and creditor to the group of borrowers. This situation occurs most obviously with the financial intermediaries.

These financial intermediaries, in particular the commercial banks, are often holding deposits from, as well as making loans to, the same developing countries. These deposits may be held by the borrowing country for transactions purposes, or as part of their stock of foreign exchange reserves, or the deposits could arise from loans being drawn down but not yet utilised.

One could go a stage further and adjust for the role of the Bank for International Settlements. This Bank takes deposits from other central banks and redeposits the funds in the eurocurrency market. To the extent that these two types of deposit are used by the banks in order to fund their loans to the developing countries, these countries are in effect financing their own loans. It would not, therefore, be

correct to use the concept of the net transfer calculated as:

Disbursements - (Amortization + Interest)

when discussing the recycling of funds by these institutions.

The point is that recycling relates to the movement of funds from one sector of the world economy to another. To the extent that developing country deposits held with financial institutions help finance the portfolio of loans to the developing countries, these loans are not recycling funds from one sector to another.

In so far as the net transfer is an indicator of the new purchasing power which is made available to the borrower, then it is quite valid to use that indicator in relation to flows from financial institutions. However, as a comparative measure of the relative flows to different groups of developing countries from various sources, the relative deposit position of those countries vis-a-vis the financial institutions must also be taken into account. A more correct measure would offset deposits held by the borrower with the financial institution.

To the extent that the net transfer is representative of the new resources that have flowed to the recipient country, then the change in deposits held by that country with financial institutions should be deducted from the net transfer as calculated above.

In order to obtain some conceptually correct idea of the net transfer to the developing countries by the commercial banks, the following figures show the change in assets (loans) and liabilities (deposits) of banks in the BIS reporting area vis-a-vis developing countries. The balance of the flows of loans and deposits will be the net transfer. Because these flows are calculated from the change in stocks of assets and liabilities between different time periods, amortization and interest flows will be captured in the net result.

Table 1.19 Net transfer by banks to borrowers classified by income group

		Upper Middle Income	Intermediate Middle Income	Lower Middle Income	Low Income
1977	A	7523	19400	1108	257
	L	4474	11414	3764	1113
	Net Trans	+3049	+ 7986	-2656	-856
1978	A	8300	31778	8379	1445
	L	9949	15595	2253	1966
	Net Trans	-1649	+16283	+6126	-521
1979	A	13043	39546	6756	756
	L	5411	17317	4862	1394
	Net Trans	+8432	+22229	+1894	-638

Source: Calculated from BIS figures reproduced in Bank of England Quarterly Bulletin, eg Table 13 December 1980
Figures in millions US $
L = liabilities A = assets

The figures highlight the differing degree of access to bank credit for the low income countries compared with the others in that at least for 1977-79 the former have received a negative net transfer from the commercial banks. Although, for 1977, the lower middle income countries received a negative net transfer, as did the upper middle income countries in 1978.

Having calculated the conceptually correct net transfer from the banks to the developing countries, we should also note that these financial institutions are also subscribers to the debt of the development banks such as the IBRD. Therefore, to get a complete appraisal of the role of the banks in recycling funds to the NOLDCs, it is necessary to determine what share of the bank's portfolio consists of development bank debt. This contribution to development bank debt should then be apportioned between different income groups of developing countries. This apportionment should be proportionate to the development bank's lending to each income group unless specific funds can be traced

from the investor to the borrower. However, unfortunately, it has not been possible to obtain any estimate of bank investment in development bank debt. For UK banks the Bank of England does not possess such information. Further, the development banks do not have reliable estimates because some of their debt is issued by way of bearer securities. Our conclusions from this section must therefore take account of this weakness, but one suspects that the magnitude of the financial institutions' holdings of such debt will have little influence on the conclusions.

To show the role of the UK banks in the lending to developing countries, the following figures show the external claims on and liabilities of such banks to developing country members of the IBRD. The figures are classified according to the income group of the developing country.

Table 1.20 External claims & liabilities of UK banks to developing countries classified by income group

	Upper Middle Income		Intermediate Middle Income		Lower Middle Income		Low Income	
	L	C	L	C	L	C	L	C
Dec 1971	1062	479	1438	1504	307	185	13	47
" 1972	2065	1075	2169	2487	411	360	42	50
" 1973	3229	1938	3081	3546	767	809	123	110
" 1974	3637	3272	3678	4399	950	1132	145	126
" 1975	5013	5018	4493	5879	1090	1619	258	210
" 1976	5840	7377	6647	8214	1384	2231	402	209
" 1977	6115	8156	7166	8526	1657	1928	594	172
" 1978	7892	8838	8178	10861	1733	2394	893	163

Calculated from data supplied by Bank of England
Figures in millions sterling equivalent of foreign currency
C = claims (assets) L = liabilities

It is notable that upper middle income countries began the decade as net depositors to UK banks but very soon after the 1973 oil price rise became net borrowers. The intermediate middle income countries have always been net borrowers during this period, while the lower middle income countries have behaved in a similar fashion to the upper middle income group. On the other hand, the low income countries who began the decade as modest net borrowers soon became net depositors and later in the decade were substantial net depositors. In fact, if we combine the figures for lower middle income and low income groups for 1978, we find that these groups have been net depositors with the UK banks. This means that for the year in question at least, the UK banks were only net lenders to the richer developing countries.

However, we must not let these figures belittle the role of UK banks in acting as financial intermediaries and facilitating the flow of funds between developing countries. Nevertheless, such a situation leads one to ask how these poorer developing countries are going to fare if official financial flows continue to decline in relative terms. This is particularly serious when it is considered that these poorer countries need to improve their lot most, and yet may be the group least able to generate internal finance for investment projects.

1.6 Why did the Commercial Banks become such important providers of finance to LDCs during the 1970's?

In answering this question we must note two trends of the internationalisation of banking. The first relates to the growing provision of international financial intermediation services and other international banking services. This has a long history but has been hastened by advances in international communications since the late 1950's. The second trend relates to the increased provision of

international banking services and loans to LDCs in particular.

The greater internationalisation of banking has gone hand in hand with the increased activities of multinational corporations. There is considerable evidence that post 1945 expansion of US Bank Offices abroad is associated with US direct investment and trading activities (Baker 1978, Fielke 1977, Goldberg & Saunders 1980). The very large network of UK bank overseas branches is closely associated with Britain's trading and old colonial interests.

A recent influence of importance for the US banks was the imposition and later relaxation of controls on financial flows abroad imposed by the US government between 1964-74. These controls consisted of:

- The Interest Equalisation Tax which was levied on portfolio purchases of foreign securities by US residents from foreign residents;
- The Voluntary Foreign Credit Restraints Programme which limited US banks' loans to overseas borrowers; and
- The Foreign Direct Investment Programme, although voluntary at first, became compulsory in 1968 and limited financial outflows by US multinational corporations to overseas subsidiaries.

During their existence, these controls forced the US banks and their overseas (multinational) customers to transact business in the eurocurrency market with the US banks opening branches abroad for that purpose, particularly in London. The relaxation of these controls enabled US banks located in the United States to adjust the distribution of their loan portfolios between domestic and overseas assets.

This portfolio adjustment can be seen from the following figures which show the external claims of banks in the United States.

Table 1.21 External claims of US banks 1972-77

	Claims Total	Claims on Banks	Claims on Non Banks
1972	20.8	4.4	16.4
1973	26.7	6.7	20.0
1974	46.2	14.0	32.2
1975	59.7	21.5	38.2
1976	81.0	33.1	47.6
1977	89.6	36.6	53.0

Source: Llewellyn 1979, p48

These figures show a rise of over 100% during 1974 and 1975 and therefore give some support to the suggestion that the US banks were involved in a stock adjustment of their portfolios during this period.

Combined with this portfolio adjustment was the impact of slack domestic demand for loans in the USA and growing corporate liquidity in 1975 and 1976. OPEC deposits were also growing at this time, while US domestic borrowers were using the bond market and commercial paper markets (Llewellyn 1979, p32, Phalen 1977).

The US controls over capital flows acted as a filip to the eurodollar market, the major centre of which is in London. The imposition of Regulation Q by the Federal Reserve Board is also credited with an expansionary impact on the eurodollar market.

By 1970 the London section of the eurocurrency market had considerable experience of handling funds received from LDC depositors. Of particular importance, in addition to the US bank branches, were the London offices of LDC banks and the head offices of British Overseas Banks with branch networks in the developing countries. Thus, even before 1973, the developing countries had experienced the benefits of depositing funds in the eurocurrency market rather than national money markets. With the growing OPEC surpluses after 1973, the banks found

themselves increasingly liquid as these surplus countries were attracted by the interest rate advantage (discussed in chapter four) and their desire for short term liquid assets.

However, the growing internationalisation of US banks and the growing liquidity of the eurocurrency market do not, in themselves, explain why the banks increased their lending to LDCs as compared with other types of borrowers.

For an explanation of the willingness to lend to LDCs, the following factors are important:

1) Desire for assets growth

2) Profitability

3) Perceived risk of lending to LDC governments

The survey discussed in chapter seven suggests that asset growth has been an important objective of international banks during the 1970's. The model of the supply of bank loans developed in chapter three suggests that this growth is not incompatible with growing profits. The greater inflow of funds to the euromarkets after 1973 enabled the banks to fund this objective at a faster rate. As the deposits were received in foreign currencies, it was preferable to lend in the same currency so as to avoid exchange risk.

In addition, the increased liquidity of the eurocurrency market and the post 1974 portfolio adjustment of the US banks roughly coincided with a fall off in demand for bank loans by the corporate sector in the USA and Western Europe. It was therefore necessary to expand the already existing markets for LDC lending in order to achieve the growth and profits objectives.

The profitability of lending to LDCs depends upon the yield on the loan and the fees from any additional banking services that can be sold to the borrower. Many bankers see the lending process as merely a way of establishing new banker-customer relationships through which a whole variety of additional loan and non loan services can be sold to the customer.

The relative profitability of an individual loan may be approximated by the spread or margin on that loan. However, as shown in chapter four of this thesis, the spread or margin actually underestimates the profitability because front end fees are charged by the lenders.

Given this caveat, the following data from OECD Financial Market Trends shows that at least the lending to two major LDC borrowers, Brazil and Mexico, was more profitable than lending to an OECD country, France.

Table 1.22

Best loan conditions available to selected public sector borrowers (maturity and spread)

	Brazil		Mexico		France	
	MAT	SPD	MAT	SPD	MAT	SPD
1974	12	5/8-3/4	10	1/2	10	3/8-5/8
			12	1/2-3/4		
1975	7	1 3/4	5	1 1/2	5	1 1/4
1976	7	1 7/8	5	1 1/2	7	1-1 1/8
			7	1 3/4		
1977	5	1 7/8	5	1 1/2	5	5/8
	8	2 1/8	10	1 1/4-1 3/4	8	7/8-1
1978	10	1	8	3/4	10	1/2
	12	1 1/4	10	7/8-1		
	15	1 1/2				
1979	12	5/8-3/4	6	1/2	15	3/8-1/2
			12	5/8		

Source: OECD Financial Market Trends, February 1980, p98

Furthermore, the following data from the IBRD shows that many LDC borrowers paid higher spreads and received higher maturities than France during the third and fourth quarters of 1979.

Table 1.23 Average spreads and maturities of euroloans to selected developing countries

Countries	Average Spread 1979 III	IV	Average Maturity 1979 III	IV
Algeria	-	1.06	-	9.2
Argentina	0.78	0.76	11.6	10.4
Brazil	0.86	0.72	12.5	12.0
Chile	0.85	0.92	10.6	9.8
Colombia	0.73	1.25	10.0	10.0
Greece	0.55	0.51	10.0	10.2
Indonesia	0.68	-	10.0	-
Ivory Coast	1.63	1.50	10.0	7.6
Korea, Republic of	0.70	0.69	9.2	9.6
Malaysia	1.00	-	6.4	-
Mexico	0.73	0.69	9.3	8.8
Morocco	0.96	-	10.0	-
Nigeria	1.01	1.00	7.8	8.0
Philippines	1.01	0.92	12.9	10.9
Portugal	0.79	0.88	9.5	8.8
Romania	0.66	-	10.0	-
Spain	0.78	0.75	9.5	9.6
Thailand	0.64	-	8.6	-
Venezuela	0.42	0.58	1.7	7.9
Yugoslavia	0.89	0.98	10.6	8.6

Source: IBRD Annual Report 1981, p150

During the 1970's the loan loss record of loans to LDC governments was actually better than that on banks' OECD domestic lending. Even at the time of writing, with the recent increase in debt reschedulings, actual losses on LDC loans are small. Therefore, even if the larger spreads on LDC loans reflected greater perceived risk during the 1970's, this increased spread went straight to the profit and loss account as a credit item.

Data on profits from non loan banking services are not available. However, responses to the survey analysed in chapter seven suggest that one of the objectives of lending to LDCs was the development of new banker-customer relationships where non loan services could be sold for a fee.

With regard to the perceived risk of lending to LDCs, some observers (Griffiths-Jones 1980, Mendelshon 1980) suggest that the increased commodity prices of the late 1960's and early 1970's enhanced the creditworthiness of the developing countries in the eyes of the international banks. This is difficult to prove given the subjectivity of the concept of creditworthiness, nevertheless figures below show an increase in the purchasing power of exports of food products and raw materials excluding fuel.

Table 1.24 Purchasing power of export revenue

	Import Price Index (1970=100)	Value of Exports		Purchasing Power of Exports (export rev÷import price index)	
		Food	Raw Materials (ex fuel)	Food	Raw Materials (ex fuel)
1967	97	9.60	7.16	9.90	7.38
1969	93	10.52	8.59	11.31	9.23
1970	100	11.92	8.93	11.92	8.93
1971	108	12.12	8.78	11.22	8.12
1972	117	14.24	10.46	12.17	8.94
1973	146	18.96	14.96	12.98	10.25

Source: United Nations Statistical Yearbook 1981 p44 & 47
Figures in billions US $ FOB

With such increases in the purchasing power of export earnings by the developing countries, these countries would find it easier to service debt and therefore would be a better credit risk for the bankers.

The 1970 Annual Report of the World Bank noted on page 44 that much of the growth of the value of primary exports was due to higher prices. These higher prices were reflected in a continuation of improvement in the terms of trade for LDCs. This continuous improvement in the terms of

trade would have had a favourable impact upon bankers' assessment of credit risk. The way was therefore open for the developing countries to gain access to bank credit some time before the impact of the 1973 oil price rise.

However, the increase in oil prices would, ceteris paribus, increase the risk of lending to those countries. Two other factors which have reduced the risk of such lending are the techniques of lending by way of loan syndication and the roll-over nature of the loans.

The technique of loan syndication, where a syndicate of banks join together to fund a particular loan, allows each individual bank to achieve greater diversification of a given loan portfolio. Thus the individual bank's loan portfolio exhibits less risk for a given level of income.

The roll-over nature of the loan passes the interest rate risk to the borrower, thus enabling the bank to lend for long maturities while being able to change the interest rate charged to reflect fluctuations in money market rates.

Both these techniques reduced the risks to individual banks of a portfolio of loans to LDCs and made it possible for the banks to provide loans of maturities which, it was hoped by all parties, would be long enough to finance the post 1973 adjustment and development of the borrowing countries. The progress of this development providing the wherewithal to service the debt.

A further factor in perception of risk has been the establishment of Consortium Banks in the 1960's and 70's. This spread the risk of lending amongst the members of the consortium and because some of the shareholders had specialist knowledge of lending to particular regions, they were better able to assess the risk of lending (Harwick 1974). A similar suggestion has been made by Fielke (op cit) in that US bank branching followed US direct investment abroad. The existence of bank branches in certain countries increased the information that the banks

received about those countries. It is therefore not surprising, given the dominance of US banks in the early loan syndications, that countries with significant amounts of US direct investment received the lion's share of international bank loans.

The reasons for the willingness of banks to lend to the LDCs can therefore be explained by three factors:

1) The desire of the banks to expand during the 1970's, but at times, finding loan demand in OECD markets as relatively flat, but deposits, particularly OPEC surpluses, rising.
2) At least for most of the decade of the 1970's, an increasing number of LDCs were considered a good credit risk.
3) Lending to LDCs was more profitable than lending to OECD based borrowers. Even in today's financial climate, LDC loans may still turn out to be more profitable than OECD loans.

1.7 Summary

This overview of the financial flows to the developing countries notes that the private financial institutions have become the most important source of external financial resources for these countries. The reasons for this state of affairs are linked to the inability of official sources of finance to be flexible enough to provide for the needs of the developing countries, the growth aspirations of the banks and the profitability of such business. The growing importance of private sources of finance over the decade to 1980 has been accompanied, as would be expected, by a hardening of the financial terms attached to such finance.

This state of affairs leads to the asking of a further four fundamental questions:

1) What factors influence the financial terms attached to such finance?
2) How does the increase in LDC debt affect bank balance sheets and profits? In particular, does it create any risks for the international financial system and the UK financial system in particular?
3) What factors will ensure the maintenance and indeed growth of development finance from financial institutions? Furthermore, what factors will increase access to these private markets by poorer developing countries when appropriate?
4) Why has the bond market played such a small role in the external financing of LDCs?

These points are analysed in chapters four to eight of this thesis and follow upon an analysis in chapters two and three of the mechanics of the eurocurrency markets and eurobank lending.

Chapter 2

THE EUROCURRENCY MARKETS

2.1 Introduction

Chapter one of this thesis has shown the growing importance of bank credit in the total external financial flows to the developing countries. As the major part of that bank lending was carried out in the eurocurrency markets, a detailed discussion of the functioning of the eurocurrency market is required before analysis of the cost of funds, the future flows of funds and the impact of these flows upon the financial institutions can be undertaken.

The eurocurrency market is simultaneously an interbank market, a market where governments deposit and borrow funds, and a market where corporations and individuals lend and borrow. These markets differ from domestic markets by their relative lack of regulation. As a result of this lower degree of regulation there are no institutionalised privileges and therefore differences in transactions are based only upon economic factors such as risk perception or size of transaction.

There are in fact several 'eurocurrency' markets in each of the major international currencies, each market dealing in a separate form of instrument or transaction. From the financial intermediary's view of the market, eurocurrency deposits come from non negotiable time deposits, certificates of deposit and interbank deposits. Eurocurrency loans on the other hand are interbank loans or loans to non bank customers.

2.2 Definition of the Eurocurrency Market

A eurocurrency deposit is simply a deposit with a bank in a currency other than that of the country in which the bank is located (Crocket 1977, p109). Similarly, a eurocurrency loan is a loan in a currency other than that of the country in which the bank is located. Thus, eurocurrency bank business is the taking of deposits and making loans in foreign currency eg banks in the United Kingdom taking deposits or making loans in, say, US dollars.

Clendenning (1969) defined a eurodollar transaction as any transaction in US dollars undertaken by a commercial bank outside the USA at eurodollar rates. This brings out a point particular to eurocurrency business, which is that, because of factors such as greater competition, lack of reserve requirements, fewer regulations and economies of scale in transactions, interest rates in the eurocurrency markets differ from those in the domestic markets of the same currency. The reasons for these differences are fully explained in chapter four of this thesis.

It is because of the distinct interest rate structure of the eurocurrency markets and the unique risks attached to dealing in eurocurrencies, discussed in chapter four, that the limited definition of eurobanking business by Dufey and Giddy (1978 p24) is rejected by this writer. They suggest that eurocurrency business should only include external financial intermediation. This term meant, for them, the matching of foreign currency deposits with foreign currency loans. Thus any deposits not matched by loans in a similar currency are not euroloans. However, it is contended here that it is the financial terms that are important. If a UK bank takes dollar deposits at eurodollar rates, those deposits are eurodollar deposits despite the fact that the bank may sell them for sterling in the foreign exchange market and lend the sterling, thus taking on the foreign exchange risk.

The transactors of business in the eurocurrency market, be they corporations, individuals, banks including central banks, or governments, may be resident in the same country as the bank conducting the business. Alternatively they may be resident abroad, even resident in the country whose currency is being used.

2.3 Measurement of the Eurocurrency Market

When measuring any market it is necessary to distinguish between the stocks and flows of the commodity traded. In respect of the eurocurrency market Machlup (1970 p221) has defined the market aspects as "New offers of, and bids for, credit in eurocurrency, the new loans contracted during the market day and the renegotiation of old loans. Non market features are defined as loans outstanding, assets held, deposit liabilities owed ....". In effect the market is represented by the flows and the stocks are, for Machlup, the non market features.

However, the statistics that are frequently used to show the size of the eurocurrency market in fact measure only the stocks of deposits or loans. Examples of these are:-

1) Bank for International Settlements figures for the external positions of banks in the reporting area and certain off-shore branches of US banks. In fact the BIS also produce figures showing flows of loans and deposits to and from the same group of institutions covered by the external positions figures.
2) Morgan Guarantee Trust Company of New York provide figures in their publication 'World Financial Markets'. The same publication provides figures for new publicised eurocurrency loans.
3) The Bank of England figures relating to "External Liabilities and Claims of UK Monetary Sector and Certain Other Institutions in Foreign Currency". These cover the London section of the eurocurrency market only.

Apart from the conceptual weakness of measuring stocks instead of flows, these statistical sources have other shortcomings. However, it is not intended to enter into a deep conceptual analysis of the validity of these statistical sources. Instead it is considered appropriate just to mention those shortcomings that are particularly relevant to this thesis.

Weaknesses of the BIS figures

The BIS figures give two stock measures of the eurocurrency market; these are the gross measure and the net measure. The net measure only covers deposits from original suppliers or loans to final users of eurocurrency funds. Thus it nets out the interbank transactions. Nevertheless, banks are considered as original suppliers or final users of funds, a) if they are outside the BIS reporting area or b) if they switch domestic currency into foreign currency or vice versa. However, the BIS receive very little information about the amount of this inward or outward switching. Thus the estimate of this component of original sources and uses is based to a large extent on guesswork (Meyer 1976).

The BIS figures for net and gross markets cover only the eurobusiness of banks in the BIS reporting area. As at June 1982 this consisted of: Austria, Belgium, Luxembourg, Canada, Denmark, France, Italy, Japan, the Netherlands, Republic of Ireland, Sweden, Switzerland, the United Kingdom, the United States and West Germany, together with branches of US banks in certain centres in the Caribbean and the Far East. Therefore the eurobusiness of non US banks in such centres as Singapore, Hong Kong, and the Caribbean is omitted from the BIS figures as well as all the eurobusiness of many other countries such as the OPEC states.

This weakness is considered particularly important because of the growing recycling role of financial intermediaries based in OPEC

countries. As these institutions become relatively more important in lending to developing countries, an increasingly important section of eurocurrency lending to the developing countries will not be captured by the BIS figures. A study by Jay (1980) suggests that in fact banks in 58 countries are active in eurobanking.

The reason for netting out the interbank market in the net market concept was to avoid the problem of double counting, ie where the same funds change hands between several banks on their journey from original supplier to the final user. This is considered necessary so that a measure of international capital available for financing trade and investment etc can be arrived at.

The validity of this net concept of the market can be criticised. Firstly, the main distinguishing feature of the eurocurrency markets is that a separate international system of interest rates has been developed. These rates are influenced by all eurocurrency flows, including interbank flows, and the results of all the flows during a given period will be the gross stock of assets and liabilities at the end of that period. It is therefore meaningless to relate the structure of eurocurrency interest rates to the net concept of the market.

Furthermore, we have already noted the limited geographical coverage of the BIS figures and that banks outside the BIS reporting area are treated as original suppliers or final users of funds. Yet it is in the international nature of eurocurrency markets that these banks will be carrying out interbank transactions. There is therefore some inconsistency in the treatment of interbank transactions.

The net concept can also be criticised in that as far as an operator in the market is concerned, he is only interested in the gross size when he wants to evaluate his own position in the market, the chances of obtaining funds or the risks of lending to one borrower because of that borrower's existing exposure to the market.

The net concept also ignores the fact that banks could be end users of eurocurrency funds just like any other borrower. These funds may be used for real investment in the national economy of the currency concerned.

Yet another weakness is that the gross estimate of the market size excludes liabilities to, or claims on, residents in the countries of the reporting banks. Although the net measure does include liabilities and claims related to resident non banks (Dufey & Giddy 1978, p31).

The fact that eurocurrency transactions with residents are not included in the BIS gross measure of the market will not reduce our understanding of banks' exposure to the developing countries. However, it does limit our understanding of the exposure of the banking system generally to foreign currency transactions.

Weaknesses of the Morgan Guaranty figures

Morgan Guaranty publish figures for the gross and the net size of the eurocurrency market. These figures have a slightly wider geographical coverage in that they cover Bahrain, though not other oil exporting states, in addition to the countries in the BIS reporting area. Furthermore, these figures include transactions with residents of the country in which the bank is located.

However, the most important weakness as far as this thesis is concerned is the incomplete geographical coverage of the global eurocurrency market.

Weaknesses of the Bank of England figures

The figures published by the Bank of England purport to relate only to the London section of the eurocurrency market. Covering only external claims and liabilities, they ignore transactions with UK residents. As the following figures for deposits show, transactions with residents were substantial even before the abolition of UK

exchange controls in 1979; since then, however, they have grown considerably.

Table 2.1 Foreign currency deposits of UK residents with UK banks 1973-79

	Bank	Non Bank		Bank	Non Bank
1973	13.75	1.3	1978	27.9	4.5
1974	15.5	2.3	1979	36.7	4.9
1975	19.0	2.7	1980	42.7	5.57
1976	23.3	3.8	1981	64.9	10.3
1977	24.4	3.9			

Source: Bank of England Quarterly Bulletin, various issues Table 3.1
Figures in billions £ equivalent

London has always been the dominant centre for eurocurrency business, particularly eurodollar business. However, most major financial centres in Europe conduct eurocurrency business to some degree and a number of centres such as Bahrain, Singapore, Hong Kong, the Bahamas and the Cayman Islands, have grown rapidly in the last decade. The growth of these new centres has contributed to the relative decline of London from 40.2 per cent of world eurocurrency business in 1973 (Ashby 1978) to 33.9 per cent in 1978 (Bankers Trust Co).

Size and Currency Composition of the Eurocurrency Market

From the above discussion it is clear that the measures discussed do not give a conceptually correct measurement of the eurocurrency market. Nevertheless, comparison of the statistics available is useful both in giving some order of magnitude to the overall market and some indication of the differences in size reported by the various sources.

Table 2.2 Various measures of the eurocurrency market 1971-80

	BIS		Morgan Guaranty		Bank of
	Gross	Net	Gross	Net	England
1971	124	71	145	85	18
1972	164	92	215	110	25
1973	264	132	315	160	39
1974	322	77	395	220	47
1975	450	205	485	255	63
1976	539	247	595	320	87
1977	663	300	740	390	89
1978	845	375	950	495	104
1979	1068	475	1220	615	126
1980	1294	575	1515	755	145

Source: BIS: Johnston 1983 p38 & 39
Morgan Guaranty: 1971-80 World Financial Markets, various issues
Bank of England: Table entitled External Liabilities and Claims of UK Monetary Sector & Certain Other Institutions in Foreign Currencies
Figures in billions US $ except Bank of England which are billions £ equivalent

By far the most important currency used in the euromarkets is the US $. Table 2.3 below shows the relative importance of the eurodollar in London's eurocurrency business.

Table 2.3 Currency classification of the London eurocurrency market

	$	DM	SF	Others
	(Percentage shares)			
1965	82.0	8.2	4.1	5.7
1970	82.8	9.3	6.0	1.9
1975	82.0	10.8	5.1	2.2
1976	81.6	10.2	5.0	3.2
1977	79.0	12.2	5.3	3.5
1978	77.4	12.3	5.8	4.5

Source: Bank of England Quarterly Bulletin

For the global eurocurrency market, figures below from Morgan Guaranty Trust show the relative importance of the US dollar to be slightly less than that in the London section of the market.

Table 2.4 The importance of the US $ in the global eurocurrency market 1972-80

1972	78%
1973	74%
1974	76%
1975	78%
1976	80%
1977	76%
1978	74%
1979	72%
1980	74%

Source: World Financial Markets, September 1982

2.4 Statistical Sources of International Bank Lending

Apart from the sources that try to measure the size of the eurocurrency market, there are several sources of statistics specifically relating to the lending to developing countries.

The IBRD produces its World Bank Debt Tables annually. These cover international borrowing by IBRD members, thus excluding Comecon countries. The sources of finance by type of lender are given but the type of debt is generally limited to public and publicly guaranteed debt, although recently the non guaranteed private debt of 17 major borrowers has been included. They exclude debt under one year to maturity, some non guaranteed private debt, military debt and IMF lending except trust fund loans (Economist 20.3.82). These figures relate to stocks of loans although it is possible to calculate flows as amortisation payments are shown.

The OECD Development Assistance Committee provides information on loans made to 150 developing countries by 17 DAC members and other lenders such as OPEC countries. The figures include official and private long term lending but exclude OPEC private lending. Otherwise it has the same exclusions as the World Bank Debt Tables discussed above.

The OECD DAC also produces figures for stocks of loans outstanding. The coverage and weaknesses are the same as for the flow figures of loans made.

The claims figures in the BIS eurocurrency market discussed above give stocks of short term and long term bank loans. This series has the benefit of including short term loans but otherwise suffers from the shortcomings discussed on page 83 above.

Morgan Guaranty Trust Co produces monthly figures of publicised eurocurrency loans with a maturity in excess of one year. Thus the weaknesses here are that unpublicised loans are not covered, nor are short term loans, nor domestic currency loans.

2.5 The Use of Eurocurrency Market Statistics in this Thesis

Despite the shortcomings of each statistical source discussed above, various of those sources are used in this thesis. The criteria for choice are based upon suitability, timeliness and availability.

To measure the London section of the eurocurrency market, figures for external claims and liabilities of the UK monetary sector are used. However, for measures of the global market, BIS and Morgan Guaranty figures are used, often together to facilitate comparison.

To measure the amount of bank lending by banks to developing countries, BIS figures are used if total exposure or maturity structure is relevant. On the other hand, if only medium to long term loans are relevant, then IBRD figures are used.

Given the shortcomings of these various sources of data, the figures quoted should only be used as indications of orders of magnitude rather than highly accurate measures of absolute amounts.

2.6 The Nature of Eurobank Lending

The flows of bank funds to LDCs can be classified under three broad headings: a) Trade Finance, b) Project Finance, c) Programme Lending.

Trade Finance

This type of finance is, in the main, relatively short term in nature and relates to flows of goods and services of a repetitive and consumable nature. Much of such finance is actually provided by banks to the suppliers (supplier credit) and generally the techniques of loans in favour of buyers (buyer credits) are more akin to project finance or programme lending. A substantial amount of trade finance provided by banks to LDCs is insured with official export credit insurance agencies.

Programme Lending

Lending for the purpose of letting the borrower disperse the funds virtually as he wishes is known as programme lending. The most widely publicised uses of programme loans have been to finance a balance of payments deficit and/or replenish stocks of foreign exchange reserves, to repay existing loans or to assist in the finance of economic development. It must be remembered that where economic growth is hampered by an immediate shortage of foreign exchange, any external credits will help alleviate the problem at least temporarily.

All programme lending is made to the government of the borrowing country and therefore entails sovereign risk and immunity "..... foreign governments are sovereign and therefore cannot be sued without consent. Secondly, courts of one country ordinarily will not sit in judgement on the acts and omissions of another country within that country's frontiers. Thirdly, the property of a government or its instrumentality is immune. This makes judgements against sovereign governments unenforceable", (Angelini, Eng & Lees, op cit, p77).

Some protection has been given to the bearers of sovereign risk by the inclusion of clauses in loan agreements waiving sovereign immunity. These clauses have statutory support in the USA under the Foreign Sovereign Immunities Act 1976. For the United Kingdom the State Immunities Act 1978 gives similar protection (Burn 1979).

Sovereign risk may be less dangerous than commercial risks because when a corporation is liquidated it ceases as a legal entity. However, a state cannot be removed in the same manner and unless it has no further use for international finance, debt servicing will at worst be postponed. This is discussed in more detail in chapter six. Indeed the Bank for International Settlements has noted that the losses on loans to sovereign borrowers have been less than those from lending to domestic customers or private foreign borrowers.

Programme lending, like all external foreign currency lending, entails country risk, that is where the nation has insufficient foreign exchange resources to services its debts.

Project Finance

Project finance relates to finance where the only or main source of repayment is the project being financed ..... (Donaldson 1979, p53). Obviously this sort of finance is appropriate to many public and private investments in developing countries. For the banker the risks associated with this type of finance can be divided into pre-completion and post-completion risks. The former include, for example, failure of design and technology, failure of contractors and prolonged delays causing cost escalations. The lenders rarely take on any significant degree of pre-completion risk. Feasibility studies, performance guarantees from banks and proven expertise of contractors help remove such risks. The post-completion risks include the commercial operating risks, failure to generate sufficient cash flow to service the loan, failure to produce sufficient quantity or sell at a sufficient price to

break even. Furthermore, there may be political and force majeure risk. These post-completion risks can be covered by guarantees from central governments and sometimes from export credit insurance organisations. The signing of contracts to purchase the output of the project by users of the output also reduces post-completion risk.

One advantage of a project loan over programme lending is that the finance is only made available towards completion of an identifiable project. The banker can then make an assessment of the impact of the project upon the foreign currency earnings of the country, either by way of export revenue or import substitution.

Project finance does not obviate country risk. If the government controlling the project is short of foreign exchange, then the risk of the project debt not being serviced is as great as if the loan had been made on a programme basis. This risk prevails unless the lender can arrange for foreign currency revenues from the project to go direct to himself before being passed on to the borrower. This is possible for bank lenders.

Many project loans will be made to, or guaranteed by, governments in the country of the borrower. In such cases these loans will also be subject to sovereign risk.

In one way project finance gives greater security to the lending banker because of the existence of an identifiable financial flow of project revenues even to the extent of avoiding country risk as noted above. However, competitive pressures on project lending have served to increase the risk to the banker by engendering non recourse project finance. Nevertheless, in some cases detailed analysis of the risks can reduce them to the level of those associated with balance of payments financing but the spreads and fees will be higher (Sarmet 1981).

Syndicated Loans

Medium and long term lending to developing countries has been dominated by the floating rate syndicated loan. However, there have also been a number of fixed rate loans, some involving syndicates. These loans are generally in relation to officially insured or officially subsidised export buyer credits.

Syndicated loans are of particular interest to this thesis due to their important role in development finance generally and the recycling of oil exporting surpluses in particular. For the period 1973-1980 syndicated loans provided 85 per cent of the private medium and long term funds for developing countries (Goodman 1981). Furthermore, borrowing by non oil exporting LDCs accounted for 44 per cent of the syndicated loans market in the first half of 1981, rising from 21 per cent in 1972-73 (Goodman op cit).

Many loans for financing development or payments deficits are too large for one bank to finance on its own and still have a widely diversified portfolio. This problem has been overcome by the use of syndicates of banks lending to one borrower on common terms. A borrower can expect to raise larger amounts through a syndicate than through a series of individual loans or from one bank.

Because the euromarkets are relatively new and because of the international nature of the market, many lending banks lend to borrowers with whom they have not previously been acquainted. Therefore considerable expense in providing information and duplication of effort would be entailed if the borrower negotiated with all banks separately. Accordingly, negotiations take place between the borrower and the lead managers. There are, therefore, considerable savings in legal fees and other expenses by this method.

There is also the advantage that the borrower only comes to the market once instead of continually being in the market for smaller amounts.

The loan syndicate will consist of a manager or group of managers known as co-managers, an agent and the banks providing the funds (participating banks). Where co-managers are involved there will usually be a lead manager or group of lead managers. It is usually the lead managers or co-managers that as a group have won the mandate from the borrower to raise the loan syndicate and negotiate the terms of the loan agreement.

The agent carries out certain duties such as administering the draw down of the loan, administering interest payments and repayments of principal as well as circulating certain information to syndicate members during the currency of the loan. He also administers any collateral and acts for the syndicate if any legal remedies are required. With respect to these remedies, including that of declaring a default, the loan agreement provides that the view of the majority of the syndicate shall prevail. The agent has less discretion in these matters today than in past years. For these duties he receives an annual fee.

From the point of view of the borrower, the important relationship is between himself and the lead manager. Originally the lead manager would have had a previously close commercial banking relationship with the borrower. However, after periods of strong competition amongst lending banks, the lead manager tends to be the bank or group of banks which offers the finest terms. The lead manager has to win the mandate from the borrower to raise the syndicate by offering the best terms and convincing the borrower that he can deliver the 'goods'.

Even if the syndication is only on a 'best efforts' basis, the borrower expects a commitment from the lead manager. A bank's reputation will not withstand many failures to fulfil the terms of the mandate. In this respect the large commercial banks have an advantage in being syndicate managers because of their large deposit bases. The deposit base has to be in the currency of the loan, hence the US banks' early

leadership in eurodollar lending. The UK banks' buying of US banks in the late 1970's was aimed at providing a US dollar deposit base.

From the point of view of the participating bank, the important relationship is between himself and the lead manager until the loan agreement is signed and then, during the currency of the loan, between the agent and himself. The participating bank may have no direct dealings with the borrower. Again, lead managers who are large commercial banks and are able to take a substantial portion of the loan on their own books are favoured by participating banks.

Participants look to the lead manager to ensure that the mechanics of the loan are correctly executed. Although no bank would admit that it does not analyse each loan carefully, it does get some comfort from its perception of the ability of the lead manager.

Loans can be syndicated on a broadcast basis whereby the manager informs many banks by telex about the terms and invites offers of participation. This is best where the borrower is well known and the loan uncomplicated. Alternatively, if the loan is, say, a complicated project loan, or market conditions are uncertain, the lead manager and management group will fund the whole loan and not call upon outside participants. These loans are known as club loans. In either case the banks invited to manage or participate will be determined by correspondent relationships, reciprocity in terms of similar or other types of business, and the particular wishes of the borrower. Participants will expect a front end participation fee progressively related to the size of their participation.

There are three major types of syndication technique. The loan may be fully underwritten. In this case the manager accepts the whole amount of the loan but usually wants to keep only a proportion on his books and hopes to 'sell down' the balance following the establishment of the syndicate. Alternatively, the loan may be partially underwritten. Here the manager undertakes to provide a substantial amount of the loan but

the borrower only receives the remaining amount if a syndicate is successfully formed.

It may be that the managers are less certain about the terms of the loan and only undertake their 'best efforts' to raise a syndicate. If syndication is not successful the borrower does not get his money. When markets are liquid underwritten loans are the norm. However, when liquidity is tighter 'best efforts' loans become more common. The aim in all cases is to make the terms fine enough so that the manager wins the mandate from the borrower but generous enough to make syndication successful without renegotiation.

The overwhelming financial and economic advantage of the syndicated loan is that it enables the risk associated with one large loan to be spread amongst more than one lender. Put another way, a bank with a given size of loan portfolio can diversify that portfolio to a greater extent with syndicated loans than one-to-one loans.

The Roll-Over (Floating Rate) Feature of Eurocurrency Loans

The syndication technique was instrumental in allowing borrowers to obtain larger sums than previously possible. However, the developing countries amongst other borrowers, require funds not just in large amounts but also for relatively long periods commensurate with the gestation period of development projects or the economic adjustment process. The maturity required by borrowers was far greater than the maturity acceptable to depositors. If the banks were to engage in such substantial maturity transformation, they would expose themselves to interest rate risk, that is that short term rates paid upon deposits may, sometime in the future, exceed the rate on long term loans negotiated some years previously. The banks would then make revenue losses on their loan portfolios. Thus expectations of rising short term rates or even uncertainty over future short term rates will limit the

amount of medium and long term fixed interest rate finance available to any borrower.

The technique of the roll-over credit effectively passes this risk to the borrower. Under this technique, the interest costs of a loan consist of two elements, a reference money market rate and a spread or margin. The reference money market rate, the frequency of the review of that rate and the method of calculating that rate are clearly set out in the loan agreement. The reference rate most frequently used is the three month or six month London Interbank Offer Rate (LIBOR), although sometimes other rates, notably the New York Prime Rate, are used (Medlar 1982).

Typically, the reference rate is an average of the LIBOR quotations from five banks, named for this purpose in the loan agreement, at 11.00am on each review date. If that review date is every three months, the three month LIBOR is used. If the review is every six months, then the six month LIBOR is the appropriate rate.

The length of time between reviews determines the risk of an unexpected change in interest rates and how that risk is apportioned between borrower and lender. This method means that the reference rate fluctuates with short term interest rates. Because the spread or margin is only a fraction of the reference rate, typically between ½% and 2%, the borrowing costs fluctuate with short term interest rates. This means that banks can fund long term loans with short term deposits because fluctuations in the cost of short term finance are passed on to the borrower.

Clearly innovations in the eurocurrency market have facilitated the vast flow of external finance to the developing countries during the last decade. Whether those flows can be maintained depends upon three factors; firstly whether the existing stocks of debt and the future flows of debt can be serviced by the developing countries; secondly

whether the lending banks perceive that the risk of lending to developing countries has become excessive; thirdly, whether the developing countries are being 'crowded out' of private financial markets by other borrowers.

The roll-over credit passes the cost of uncertainty regarding future interest rates to the borrower. Therefore, one of the major influences on the ability of a borrower to service its eurocurrency debt must be the interest rate costs involved. For reasons that are explained in chapter six of this thesis, the writer considers that, by the nature of financial intermediation via the euromarkets, it is the ability to meet interest payments rather than the ability to repay principal that is important in the case of sovereign borrowing. Therefore this study investigates the determinants of interest costs on eurocurrency syndicated loans in chapter four. However, before these interest costs are investigated, we must analyse the reasons for the growth of the eurocurrency market and the nature of the eurobank lending function. This is achieved in chapter three.

Chapter 3

THE GROWTH OF THE EUROCURRENCY MARKET

3.1 The Literature

Figures on page 87 above suggest that the eurocurrency market has grown in gross terms from just over US $100 billion in 1971 to over US $1500 billion in 1980.

It is therefore instructive to look at the theoretical and empirical factors explaining this growth in order to determine whether it can continue into the 1980's. The future growth of the eurocurrency market will have a considerable influence on the availability of private financial flows to developing countries.

Theoretical analysis of the causes of the growth of the eurocurrency market began by treating eurobanks as analogous to domestic banks and applying traditional bank credit multiplier models.

Bell (1964) points out that the likelihood of euroloans being redeposited in the euromarkets is lower than it is in domestic markets thus implying that the multiplier is smaller than the domestic multiplier. Friedman (1969), on the other hand, concentrates on the low level of reserves held by eurobanks and suggests that the multiplier is large. Klopstock (1968) had already explained the small reserve holdings of eurobanks in terms of no official reserve requirements, the matching of maturities on loans and deposits, and the existence of an interbank market.

Swoboda (1968) incorporated the existence of considerable credit pyramiding in the interbank market. He arrived at a multiplier coefficient of:

$$\frac{1}{1-b^{m}d}$$

where b = the proportion of deposits onloaned by each bank
m = number of intermediaries in the interbank market
d = the redeposit ratio

This coefficient has been criticised by McKenzie (1976) on the grounds that not every chain of interbank pyramiding will consist of m intermediaries. In the absence of controls the reserve asset ratio may not be the same for all banks and, furthermore, the redeposit ratio may differ according to the portfolio preferences of each bank in the interbank market.

Klopstock (1970) incorporates the problem of a low redeposit ratio and therefore small multiplier where the financial institutions' liabilities exhibit less moneyness than bank liabilities. The redeposit ratio was considered to be small because:

1) The recipient of a dollar loan may convert it into local currency - or

2) The recipient may buy US goods or services.

Clendenning (1971) extended a comment made by Bell (op cit) and differentiates the role of central banks from other operators in the system. When central banks deposit their foreign exchange reserves in the euromarkets, the redeposit ratio will be higher and therefore the multiplier larger than when central banks refrain from so depositing their reserves. Ironically in 1971 G10 countries agreed to stop depositing their reserves in the eurocurrency market, although developing country governments continue to do so.

Clendenning had hoped to reconcile the studies producing small multipliers with those producing large ones. However he was not successful. Later studies by Makin give a coefficient of 18.45 (Makin 1972) and by Lee give a coefficient of 1.51 (Lee 1973). Both studies covered a similar time period and took account of central bank activity.

This difficulty in obtaining agreement on the size of the multiplier is hardly surprising. To begin with, multiplier models assume an easily identified reserve base and an accurately measured quantity of loans. Difficulties arise in measuring the reserve base of the eurobanks, not least because lines of credit are used to support lending

operations and the magnitude of these lines is not published. The existence of unpublished lines of credit permits the reduction of published reserves. It should also be remembered that eurobanks are often only departments or branches of domestic banks with all the financial power of the domestic institution in support.

Given the various measures of the eurocurrency market and the international character of its business, it is doubtful whether all transactions are captured by the statistics, in which case measures of the multiplier will be spurious.

The traditional methodology of multiplier models took a predetermined reserve ratio and postulated an ex ante credit multiplier which gave an indication of the maximum amount of credit which could be created by the banking system. However, the study by Lee, as well as studies by FNCB (1974) and Fratiani & Savona (1971) try to identify a reserve base and divide this into the total size of the euromarket to arrive at a coefficient for the multiplier. This is an ex post multiplier; it tells us nothing about whether the maximum size has been reached nor what factors have inhibited, if any, the achievement of maximum credit creation.

Bearing this point in mind and given the economies in eurobank reserve holding over time which Makin notes in his 1973 paper, the concept of the bank credit multiplier in its traditional form does not seem to be a fruitful explanation of the growth of the eurocurrency markets.

A more meaningful approach is to examine those factors which influence depositors' and borrowers' preferences for eurocurrency over domestic currency transactions in their portfolios. This portfolio approach can then explain growth of the euromarkets in terms of transfers of funds from domestic to eurobanks and the redeposit of eurocurrency with eurobanks. Growth of the market is then explained in terms of outward shifts in eurocurrency supply and demand curves as pref-

erences shift in favour of the euromarkets.

The application of portfolio theory to eurobank behaviour follows the approach of Gurley and Shaw (1960) and Tobin (1963, 1967) to the domestic financial institutions.

The demand for reserves by a eurobank is a continuous function of the opportunity cost of those reserves and therefore the bank can expand its balance sheet, assuming traditional profit maximisation, until the marginal revenue on loans equals the marginal cost of deposits. As lending increases, ceteris paribus, the marginal revenue will fall and as deposits increase the marginal cost will rise. There is therefore a finite limit to the size of the banks' balance sheet.

Hewson and Sakakibara (1974) derive supply and demand functions for the eurocurrency markets in order to determine the constraints upon the size of those markets. They suggest, following Tobin, op cit, that an exogenous increase in eurocurrency deposits will cause a lowering of the eurocurrency interest rates. Such a fall will cause some depositors in the euromarkets to shift back to the domestic market because the differential between the two is reduced. This is shown in the following diagram.

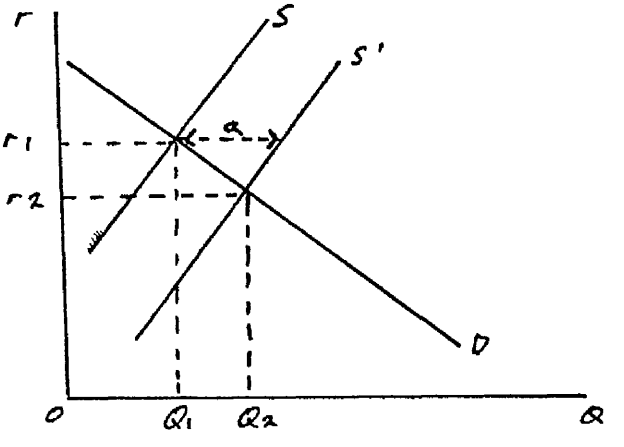


Figure 3.1 Impact of a shift in supply upon euromarket size

The outward shift in deposits is represented by 'a' but the growth in the total euromarket is only Q2 - Q1. Thus, while the demand for loans is a negative function of the rate of interest, the initial impact on the size of the euromarket must be less than unity. Hewson and Sakakibara confusingly call this impact the multiplier (Hewson and Sakakibara op cit p122). In fact if the redeposit ratio is positive subsequent endogenous shifts in the supply function, caused by redepositing, will result in a long run multiplier greater than the impact multiplier. It can be seen therefore that yet again the redeposit ratio is important in determining the size of the eurocurrency market.

Hewson and Sakakibara also note on p123-124 that there must be some shift parameters, eg income, wealth or level of transactions, which encourage investors to hold more deposits at a lower rate of interest. If portfolio preferences were determined solely by the rate of interest, depositors would not be in equilibrium at the new lower rate. The exception to this would be where there was an excess demand for deposits at the previous higher rate of interest. Given the degree of competition in the euromarkets they consider this to be unlikely.

One shift parameter not mentioned is tastes. These could be induced by advertising and marketing, both of which have played an increasing role in international banking during the 1970's. Advertising and marketing would be directed at both depositors and borrowers, resulting in outward shifts in both the supply and demand functions. This point is discussed in detail later in this paper.

The result of Hewson and Sakakibara's work is a multiplier of "not significantly different from zero ..... and 1.61 if European central banks had redeposited all the increases in their foreign exchange reserves in the eurodollar market ....." (p136).

More recent literature has treated the eurobanks as analogous to non bank financial intermediaries ".... since their deposits do not serve as a medium of exchange and their reserves (if any) are held with

US commercial banks and not with the central bank ....." (Niehans and Hewson 1976). This begs fundamental questions regarding the validity of the division of financial intermediaries into banks on one hand and non banks on the other. Witness the roles of building societies and banks in the United Kingdom at the present!

Niehans and Hewson (1976) emphasise the role of the redeposit ratio (for them the marginal propensity to hold eurodollars) but abstract from this marginal propensity in order to arrive at a multiplier less than unity.

Their work continues by discussing the relevance of looking at the absolute size of the market. They particularly think that it is more important to look at the liquidity creating role of the euromarkets. They consider that, whereas domestic banks add to total liquidity by taking short term deposits and granting longer term loans, the eurobanks do not behave this way. They tend to match deposit maturities with loan maturities and therefore do not engage in significant maturity transformations. Therefore the eurobanks do not contribute significantly to total liquidity.

This view of the lack of maturity transformation by eurobanks is only valid if the roll-over period of the loan is considered to be the relevant maturity of that loan. However, from the borrowers' point of view, if they negotiate a ten year loan rolled over, say, every six months, then ten years is the maturity of the commitment. What is more, the borrowers' expenditures will be made in the expectation of ten years of credit. Taking this view the eurobanks engage in considerable maturity transformation and therefore add to total liquidity.

Data below compiled from the Bank of England Quarterly Bulletin for January 1975 and June 1980 show the amount of maturity transformation that does take place in the London eurocurrency market.

Table 3.1

Maturity analysis of net position of UK banks and certain other institutions

	20.8.75	21.5.80
Less than 8 days	-7820	-21583
8 days to less than 1 month	-3898	-14094
1 month to less than 3 months	-7749	-20021
3 months to less than 6 months	-5942	-14719
6 months to less than 1 year	-1477	-1727
1 year to less than 3 years	+6296	+14574
3 years and over	+20703	+54829

Figures in US $ millions
Source: Bank of England Quarterly Bulletin

A negative net position indicates that bank deposits are greater than loans at that maturity, whereas a positive net position indicates that loans are in excess of deposits. Clearly therefore the banks in London are net holders of deposits at short maturities and net lenders at long maturities. This runs counter to the suggestion of Niehans and Hewson, op cit, and indicates that the London eurocurrency market does add to their concept of world net liquidity. Given the international nature of the eurocurrency market, there is no reason to think that other eurocurrency centres have a maturity structure different from that of London.

The treatment of eurobanks as analogous to non bank financial intermediaries has resulted in at least one work suggesting that they cannot multiple credit create (Dufey & Giddy 1978 p126). The difference between domestic banks and eurobanks, for Dufey and Giddy, is that domestic banks keep their reserves in the form of the monetary base while eurobanks keep their reserves with domestic banks. This is an erroneous distinction for most countries because the monetary base is not the only constituent of bank reserves eg in the UK domestic and eurobanks hold reserves with the discount houses.

Other recent work (Llewellyn 1979, 1980) treating eurobanks as analogous to NBFI's suggests that they can only create credit if:

1) Through greater efficiency eurobanks can offer credit at lower rates of interest, and demand is interest elastic.
2) Domestic banks are unwilling or unable to compete in the markets of the eurobanks.
3) Domestic banks ration credit and the resulting excess demand is accommodated by the eurobanks.
4) Domestic banks require a wider margin between deposit and loan rates than eurobanks either through collusion to achieve larger profits or because of officially imposed reserve requirements.

These points do not preclude multiple credit creation. Whether or not eurobanks fund their increased lending from a fractional reserve base or by attracting new reserves depends upon the redeposit ratio. This ratio is determined by the portfolio preferences of borrowers and lenders. Multiple credit creation is therefore determined by the same factors that influence the portfolio preferences of eurobanks and their customers.

Theoretically there is no reason why any financial intermediary should not multiple credit create. To do so it has to ensure that its liabilities are preferable to those of its competitors. Domestic banks have an advantage in that their liabilities are the traditional store of purchasing power and therefore exhibit greater moneyness than do those of eurobanks. Other intermediaries, therefore, will have to incur greater costs in order to make their liabilities more attractive. This rising cost of attracting deposits, given loan revenue, will limit the size of the eurobanks' balance sheet at a smaller level than if these costs did not have to be incurred.

Again this is no different from domestic banks. Even without reserve requirements they would not multiple credit create to infinity

since, even with a constant cost of funds function, a negatively sloped demand for loans function would ensure that at some stage the revenue from the marginal loan would be below the marginal cost of funds.

This may explain the low multipliers in the euromarkets. Their liabilities have less moneyness than domestic deposits therefore leakages are greater, the cost of reducing those leakages to an acceptable level is perceived as too high in this new market.

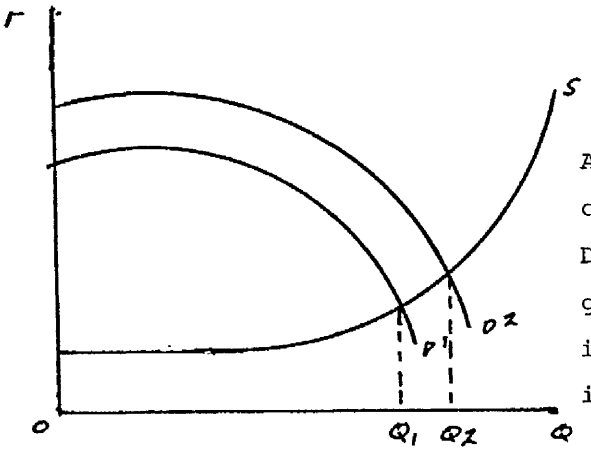
It is clear, therefore, that the difference between bank and non bank financial intermediaries and, in the context of this study, banks and eurobanks is not one of kind but one of degree.

The limitations upon the eurobanks' ability to increase total credit suggested by Llewellyn, op cit, ignore the influence and possibility of endogenous shifts in the demand for total credit resulting from increased income. This increase in income may be caused by expansion of eurobank credit within the constraints that he has suggested. If the eurobanks were to expand credit, because the domestic banks rationed it at the current rate of interest, total income would rise as would the total level of deposits. This rise in income would lead to an increased demand for total credit. If domestic banks continue to ration credit, the increased demand would have to be met in the euromarkets. We therefore have income induced shifts in the supply of deposits and the supply of loans. Given portfolio preferences, these shifts result in a greater level of credit creation by the eurobanks. This throws into doubt the validity of treating the supply and demand functions as independent of each other. The validity of this independence is investigated below when analysing the influence of marketing.

An example of the way in which a redistribution and growth of income may influence the size of the euromarkets is the depositing of balance of payments surpluses in the eurocurrency markets. The oil exporters have shown a marked preference for short term eurocurrency

deposits compared with domestic deposits.

A recent paper (Heller 1979) considered that the size of the eurocurrency market is determined by the demand for eurocurrency loans. This is easily incorporated into the portfolio theory as follows. As the portfolio preferences of borrowers shift in favour of eurocurrency loans, the banks will find it profitable to encourage portfolio changes in depositors. Thus a shift in the demand for loans can cause the market to grow within the constraints of the portfolio preferences of the market participants. This is shown in the following diagram:



As the demand for loans curve shifts from D1 to D2 the size of the market grows from Q1 to Q2. This ignores any induced shift in the supply curve.

Figure 3.2 Impact of a shift in demand upon euromarket size

3.2 The Role of Marketing in the Growth of the Eurocurrency Market

It has already been noted that, given the low and maybe declining reserve holdings of eurobanks, the redeposit ratio is an important determinant of the size of the eurocurrency market. This ratio is influenced by factors that cause the preferences of depositors and borrowers to change, as well as factors which cause the global level of deposits to change. Amongst the latter, increased income due to increased eurocurrency lending has been suggested above.

Preferences of depositors and of borrowers are influenced by:-

1) Factors inherent in the nature of the market such as higher deposit rates, lower loan rates and the nature of the market instruments eg floating rate syndicated loans.
2) A learning process over time.
3) Induced changes in tastes which result from the marketing efforts of the banks. This role of marketing may enhance the learning process in 2) above.

It is feasible that any change in the nature of the market or its instruments could be influenced by marketing policy eg price differentials or the development of new deposit or loan instruments. Therefore marketing is seen as having an important influence over the growth of the eurocurrency market.

An example of the influence of marketing and the nature of the instrument directing borrowers' preferences to the euromarkets has been the heavy borrowing during the 1970's by developing countries. The instrument, the roll-over syndicated loan, much more common in the euromarkets than domestic markets, was ideal for the long term loans required by developing countries. The sheer salesmanship employed by many banks in this field has led to accusations that the banks have lent more money to some sovereign borrowers than those borrowers really needed.

Analysing the role of marketing on the size of the balance sheets of financial intermediaries is very interesting since, unlike many types of industry, the marketing effort is undertaken to attract the inputs to the production process, ie deposits, as well as to sell the output, ie loans.

Marketing aimed at depositors will shift the supply of deposits function to the right. The degree of response can be considered to be a marketing elasticity of supply of deposits. Marketing aimed at borrowers will likewise shift the loan function to the right and a marketing elasticity of demand for loans can be derived.

In practice, the marketing aimed at depositors will both increase the redeposit ratio (endogenous shift) and attract new depositors (exogenous shift) to euromarkets, though it will be impossible to distinguish between the two.

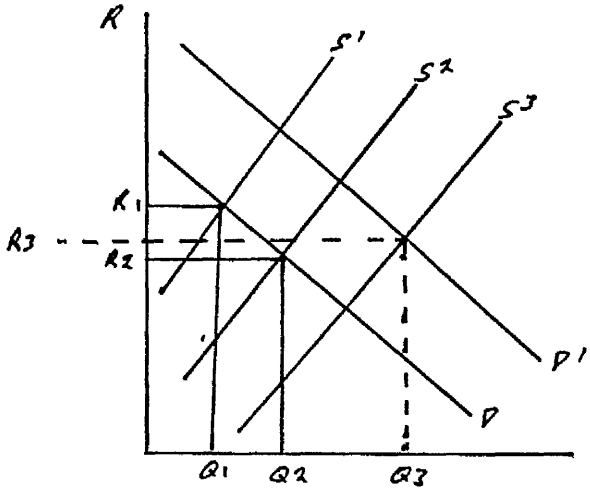
Similarly, marketing directed towards borrowers will increase the volume of transactions in the financial system and thus increase income. This will result in an endogenous shift in the supply of deposits assuming that the supply of deposits is positively related to the level of income.

Thus the introduction of marketing throws into doubt the validity of treating the supply and demand curves, and particularly shifts in those curves, as independent. In particular, shifts in loan functions will result in shifts in deposit functions.

This impact of marketing is illustrated in the following diagram. Assume first an exogenous increase in deposits shifting the supply curve from S1 to S2. The banks then market their loan services, shifting the demand curve to the right to D1. This reduces the fall in the rate of interest and thus reduces the leakage back to the domestic market suggested by Tobin, op cit. The interest elasticity of supply of deposits will influence the change in interest rates and the marketing elasticity of demand for loans will determine the size of the shift in

the loan function.

If we assume, only for explanatory purposes, a previously zero redeposit ratio, marketing aimed at depositors will increase the redeposit ratio and shift the supply function to S3. The marketing elasticity of supply of deposits and the interest elasticity of demand for loans determine the interest rate and size of bank balance sheet, ie Q3.



If the marketing were only aimed at borrowers, the demand for loans will shift to D1. Then the marketing elasticity of demand for loans and the interest elasticity of supply of deposits will determine the size of the balance sheet.

Figure 3.3 The impact of marketing upon euromarket size

It can be seen therefore that when marketing is directed at both borrowers and lenders, the size of the banks' balance sheet is determined by the marketing elasticity and interest elasticity of demand for loans and by the marketing elasticity and interest elasticity of supply of deposits.

Strictly speaking, the idea that the supply of deposits and demand for loanable funds are equal is unrealistic. The financial markets dominated by financial intermediaries show a spread between bid rates and offer rates. In the eurocurrency interbank market this may be only one eighth of one per cent. However, between original depositors and final borrowers, it may be in excess of three per cent. This spread represents the gross profit of the intermediating function from which the non interest rate costs will be met.

If the bank engages in a marketing campaign, its costs will rise and if it wishes to maintain its level of profitability, it will have to restrain the size of its balance sheet. This is shown in the following diagram:

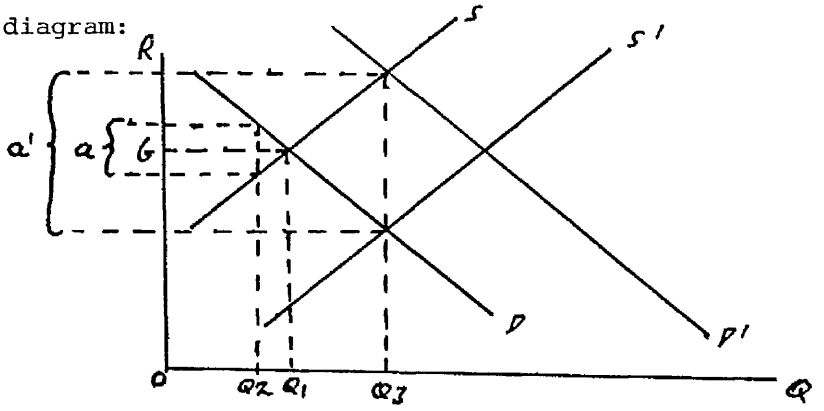


Figure 3.4 The impact of marketing upon the spread between bid and offer rates

Without any costs associated with financial intermediation, the bank's balance sheet would initially be Q1 with the rate of interest 'b'. Where costs of financial intermediation are proxied by the spread between deposit and loans rates 'a', the balance sheet is reduced to Q2. However, where the demand for bank services (eg deposits and loans) is marketing elastic, the spread "a'" is increased but the resulting outward shift in the supply and demand functions actually increases the balance sheet to Q3.

Obviously the smaller the gross margin required, the larger will be the bank's balance sheet. Although marketing may increase the size of gross margin required, there are several features of eurobanking which work to reduce the size of that margin. These factors include:-

- smaller reserve asset requirements
- the fact that eurobanks do not run a cash transmission service
- economies of scale in eurobank transactions
- lack of cartel agreements between banks
- lack of regulatory expenses such as deposit insurance premiums

It is clear from what has been said that the growth of the eurocurrency market depends upon that market being more attractive than the domestic currency market. The cost advantages of eurobanking over domestic banking give the euromarkets certain advantages in terms of being able to offer higher explicit yields on deposits and lower explicit costs of loans. However, a number of other factors have operated during the 1960's and 1970's to shift the preferences of depositors and borrowers in favour of the euromarkets. The marketing of eurobank services is considered in this chapter to be important. Various previous studies have considered the influence of governmental controls. No doubt these controls had a considerable influence during their existence but the euromarkets continued to grow when the controls were relaxed or abolished. One influence compatible with the role of marketing as described above is that banks' corporate objectives may include balance sheet growth as a strong element.

Indeed, it is suggested in this thesis that growth of balance sheets has been a major objective of eurobanks during the 1970's. This growth may be in its pure form of growth per se, subject to say, a minimum profits constraint, or a short term manifestation of the objective of long run profit maximisation. The next section of this chapter, by developing a model of the eurobank lending function, shows that because of the highly elastic demand curve for eurobank loans and the indivisibilities of certain inputs, the eurobanking firm is unlikely to be constrained by the maximisation of profit; the major constraints being the minimum acceptable return on capital and/or the maximum acceptable level of risk.

3.3 A Theory of the Eurobank Lending Function

Financial Intermediation

The welfare implications of the existence of financial markets are well documented in textbooks covering financial economics (eg Bain 1981, Coghlan 1980, Goodhart 1975, Furness 1972). Although not necessary for the existence of such markets, it is nevertheless true that these markets are characterised by the existence either of brokers, acting as agents, or of intermediaries acting as principals. Some markets have both types of operators eg the interbank markets.

This study is concerned with the operations of financial intermediaries and, in particular, the operations of those in the eurocurrency market. The differences between euromarket intermediaries and domestic bank type intermediaries are highlighted in order to explain the objectives of eurobanks in their lending to developing countries.

Goodhart (1975 ch6) suggests three functions of financial intermediaries:-

1) to exploit economies of scale in financial markets, information gathering and portfolio management.
2) the provision of insurance services based upon actuarial expectation of their contingent liabilities and economies of scale in portfolio diversification.
3) asset transformation providing liabilities which are preferred by lenders and issuing assets preferred by borrowers.

On closer inspection these functions are all more profitable for financial intermediaries than individual market participants because the intermediary enjoys economies of scale. These economies of scale are particularly noticeable in portfolio diversification of both assets and liabilities and in the provision of information to lenders and

gathering of information and analysis about borrowers.

Some types of financial intermediary find their reward by simply exploiting these economies of scale but matching the risks on their liabilities with the risks on their assets. Examples of this are unit trusts and insurance companies. Banks on the other hand are rewarded for transforming the risks. For example, the archetypal bank provides depositors with liquid low risk deposits while it provides borrowers with longer term maturity certain loans. The bank is providing a preferred liability to the depositor and therefore at low cost and providing a preferred asset to the borrower and therefore at a higher price; the differences between the prices is the banker's reward.

The banker therefore fulfills the role of asset transformation, it provides its liability to the depositor and uses the funds to acquire assets of different characteristics, the liability of the borrower. This transformation takes place at three levels:

1) Transformation by maturity ie taking short-term deposits and providing longer term loans.
2) Transformation by risk ie providing deposits with low risk and acquiring assets of a higher risk.
3) Transformation by currency ie taking deposits in one currency and providing loans in another. This is really a special case of example 2) because the bank is simply taking on currency exposure risk.

This transformation process is common to all banks in varying combinations of the three types of transformation suggested above. Therefore it is not the transformation function that isolates eurobanks or the eurobanking departments of domestic banks from the domestic banks themselves. Instead the writer believes that the difference between eurobanks and other banks is not to be found in the fundamentals of the transformation process but in the mechanics of the techniques of transformation. Because these mechanics differ between

eurobanks and other banks, eurobanks have different cost structures and a different industrial structure.

International and Domestic Financial Intermediaries Compared

Domestic banks provide three basic groups of services. Firstly there is the safe custody of the medium of exchange, secondly there is the cash transmission service provided by the debit and credit clearing systems. Lastly there is the provision of intermediation between financial deficit and financial surplus sectors of the economy. Although the money transmission system and the safe custody function are both very important for the efficient operation of the economy, the raison d'etre of the bank is the function of financial intermediation. Indeed the great variety of services which banks offer, including the various types of accounts, the debit and credit clearing, the safe custody service, as well as many ancillary advisory services, are aimed at expanding depositors or borrowers and thus the intermediating function.

The banks' major contribution to profits comes from the difference between the costs of attracting deposits and the interest earned from lending those funds. The major distinction between domestic and international banks in this respect is in the nature of the costs incurred in the intermediating process. Domestic banks provide the money transmission system, a branch and/or correspondent network system and a host of services priced at various degrees of loss to attract funds as well as using the interbank market to attract funds.

Eurobank financial intermediaries on the other hand do not provide a money transmission service and what services they do offer are either earning fees that cover costs or aimed at attracting borrowers; these services are not aimed at attracting deposits. Deposits are attracted by offering a competitive explicit rate of return either in the interbank market or to various non bank sources.

Because eurobanks do not provide the small 'retail' banking services of domestic banks and do not maintain such large branch networks, the short run variable costs of eurobanking do not exhibit diminishing marginal productivity. It may be thought that if a bank has to be more aggressive in attracting funds in order to expand, the marginal costs of funds will rise. However, as is explained below, the explicit interest cost of funds is not considered a cost of production of the eurobanking firm because of the technique of pricing eurocurrency loans. In fact, Grubel (1977) suggests that eurobanks are acting as brokers rather than banks. However, the writer considers this to be an erroneous interpretation as it is based upon the interpretation of degree of eurobank maturity transformation by Hewson (1975). However Hewson's work, perpetuated in Niehans & Hewson (1976) was wrong in this respect and is shown to be so on page 105 above.

On the lending side, a marked difference between domestic and international lending is the distance between the bank and the borrower. Because of the competitiveness of the international loan markets, lenders may provide funds to borrowers with whom they have had no previous banking relationship. This is less likely to occur in domestic banking. Accordingly, the knowledge that the international borrower has regarding his debtor will be less and therefore the risks higher than those attendant upon domestic lending, although the syndication system diversifies away some of this risk. Being international in nature, it is more likely that international lending will result in exchange risk for the bank and the borrower. Furthermore, to the extent that the lending is in a currency foreign to the borrower, it will entail country risk for the lending bank.

One feature of international financial intermediation that is more pronounced than in domestic markets, is the substantial chain of interbank transactions. Dematte (1981) suggests that the size of the chain is associated with the distance between original suppliers of

funds, surplus units, and final users of funds, deficit units, this distance being greater because of the international nature of the market. An alternative explanation is that the establishment of an interbank market and the resulting chains stem from the competition for deposits in currencies in which the banks do not have a natural deposit base eg non US banks bidding for dollar deposits. Once the banks use the interbank market for funds they provide a two way business of bidding and offering funds even if they are net bidders. The result is that banks engage in interbank dealings for their own sake thus increasing the length of any 'chain'.

Because of the length of the interbank chain there are opportunities for banks to specialise in various functions (Dematte , op cit), notes three distinct functions:-

1) the collecting of deposits from non bank sources

2) the final lending to non bank borrowers

3) intermediating between banks

In practice, it is more probable that banks specialise in each of these functions at different times. However, the location of some banks eg OPEC, US and the branches of some British Overseas Banks, make them well placed to attract funds, while the expertise of such banks as UK merchant banks, consortium banks and US banks enables them to dominate the management of loans to final users.

This specialisation within the market by constituent banks increases the perceived distance between borrowers and lenders. This in turn increases the competition between lenders and therefore the variety of sources of funds to borrowers compared with that available to the customers of domestic banks. As a result the demand curve for eurocurrency loans from any individual bank will be more price elastic than such a curve of a domestic bank.

3.3.1 A Theory of the Eurobanking Firm

One fundamental difference in the application of the theory of the firm to international banking compared with domestic banking is that international banking more closely resembles a one product production system. This is because international banks use relatively more resources lending money and relatively less resources in attracting deposits compared with domestic banks.

The growing literature regarding the theory of the banking firm explains a bank's behaviour from several angles.

Baltenspergen (1980) divides the literature on the banking firm into two groups. One group he refers to as partial models, where the total size of the bank's portfolio is given, therefore the question at issue is the optimal allocation of this portfolio. The second group consist of "..... Complete models of the banking firm, ie models which attempt to explain the joint determination of not only the structure of assets and liabilities and their interaction, but also the total scale of the bank's operation and portfolio", (Baltenspergen, op cit, p3). It seems that from casual observation of the aggressive marketing policies of the eurobanks, both in relation to deposits and loans, that a theory of the banking firm which assumes the portfolio size to be exogenously given is inappropriate.

Of the complete models, Baltenspergen identifies three groups. Group one models assume that banks are monopolistic price setters in deposits and/or credit markets. These models are clearly inappropriate for the competitive euromarkets. Group two models assume banks are risk averse and that instead of maximising profits only, the utility function to be maximised has profits as a positive element, and risk, usually incorporated as variability in profits or income, as a negative element. The group three models emphasise the importance of the real resource or production aspects of banking. These models essentially represent pure production cost models of banking ie they explain size

and structure of bank liabilities and assets purely in terms of the flows of real resource costs of generating those stocks (emphasising in particular the cost of deposit production). This production cost approach has been emphasised by Pesek (1970), Saving (1977), Towey (1974) and Sealey & Lindley (1977).

Although such an approach seems a plausible starting point from which to describe eurobanking, they have two weaknesses. Firstly, they assume profit maximisation is the dominant element of the bank's utility function. Secondly, stemming directly from the profit maximising function, the deposit attracting function is assumed to exhibit rising marginal cost while revenue shows falling marginal revenue.

The literature cited above relates to the behaviour of "banks" taken to mean domestic banks. These banks differ from eurobanks in the view of the writer simply because the deposit attracting function of domestic banks exhibits rising marginal cost whereas that of eurobanks does not.

The suggestion that domestic banking exhibits rising marginal cost is supported, at least for US banks, by Benston, Hanweck and Humphrey (1982). They consider their work to be an improvement upon such work as Bell and Murphy (1968), and Benston (1965), because these earlier studies which generally found decreasing or constant marginal cost, related to the provision of one type of bank service, whereas the later work includes the total provision of all banking services by the firm.

Benston, Hanweck & Humphrey (op cit) use an output measure which incorporates deposit taking services and loan making services. This is only valid if the bank's objective function incorporates numbers of deposits or value of deposits positively in the function. This may be correct for a commercial bank that generates business from very intimate banker-customer relationships. However, it is considered here, that such relationships are not a common feature of

eurobanking. As such, eurobanks do not get any benefit from deposits except that they fund earning assets. Therefore, deposits are not considered to be an output of the eurobank but simply an input to the production process.

Frazer (1982) would suggest falling marginal costs even in domestic banking. Osborne (1982) also suggests falling marginal costs in attracting domestic deposits for banks situated in the USA. These last two studies have again concentrated on one product of the banking firm - cash transmission in the Frazer paper and deposits in the one by Osborne.

However, in eurobanking deposits are attracted not by a variety of labour intensive services but by the explicit interest rate paid on deposits. If eurobanks offer additional non loan services, these are generally fee earning services contributing to the total revenue of the bank and not conducted basically to attract deposits. Moreover, the eurobanks do not operate a cash transmission system.

It is important to note a distinction between the behaviour of average and marginal costs due to changes in the number of transactions and the changes in costs due to the size of each transaction. This distinction is important in the analysis of financial intermediation because in the production of, say a sparking plug, a given level of non raw material inputs is required to transform a given quantity of raw materials into a plug. In financial intermediation no such rigidity exists; the same quantity of non deposit resources can be used for a $100 loan or a $10,000 loan. As the loan size increases, so the transaction may become more complex, say a $1 million loan requiring more non deposit resources than the $10,000 loan but within each degree of complexity there will be a great range of loan sizes that can result from the same input of non deposit resources. This point is returned to below when we discuss the short and the long run in relation to the costs of intermediation.

One price which might rise as banks strive to increase the total value of their lending business is the cost of deposits, particularly from the interbank market. However, by the terms of the eurocurrency loan agreements, the interest rate costs of funding the loans are passed on to the borrower by charging a reference rate, eg LIBOR, plus a spread. Therefore the funding costs do not reckon as a cost of production to the eurobank although these costs do influence the price which the borrower pays for the service.

This analysis therefore proceeds to investigate the non deposit interest resource costs of financial intermediation.

Short-run Cost Functions

A bank's costs are assumed in this analysis to be dominated by fixed costs because the major constituents are the costs of maintaining premises, information technology systems and a highly trained professional labour force. By the nature of the conditions of employment and expenses of training, the professional labour force exhibits considerable embodied capital and therefore the size of this labour force is not varied with short term fluctuations in output ie lending.

The variable costs consist of labour costs attributable to clerical staff, some of which, at least in London, will be of a temporary nature. There will also be the costs of the clerical systems of the bank. These clerical costs are assumed to be a constant function of the quantity of total staff employed.

An important feature of this analysis is that the fixed factors and the variable labour factor exhibit considerable indivisibility. Amongst the fixed factors, indivisibilities are found in the information technology systems and in the labour force. The variable labour factor also exhibits indivisibility because of the discrete nature of the labour input. In this latter case the result is that

marginal cost is discontinuous and, in fact, zero for most of the quantity of output.

At this stage, it is important to define marginal product. In this analysis it is assumed to be only one loan ie the marginal loan and not a number of loans, say an additional ten or twenty. The reason for adopting such a definition here is that the output of one loan could be a simple process ie using little labour time, or a more complex process using more labour time. It is therefore difficult to determine how many loans an additional unit of labour will process or how many currency units are involved with each loan (ref p121 above).

Furthermore, if the management took the view that an additional worker could process 100 loans within a given time, the marginal cost of labour would be the wage divided by 100; if 101 loans were processed, the marginal cost of the last loan would be zero. If, on the other hand, the management had a rule that workers only processed 100 loans, then the marginal cost of the one hundred and first loan would be equal to the wage of the additional worker. It is therefore considered that it is only valid to define marginal product as a group of units of output if production is in discrete batches of a uniform size and that those batches are less than the full capacity of the worker.

The cost functions of the eurobank can thus be depicted as shown below:

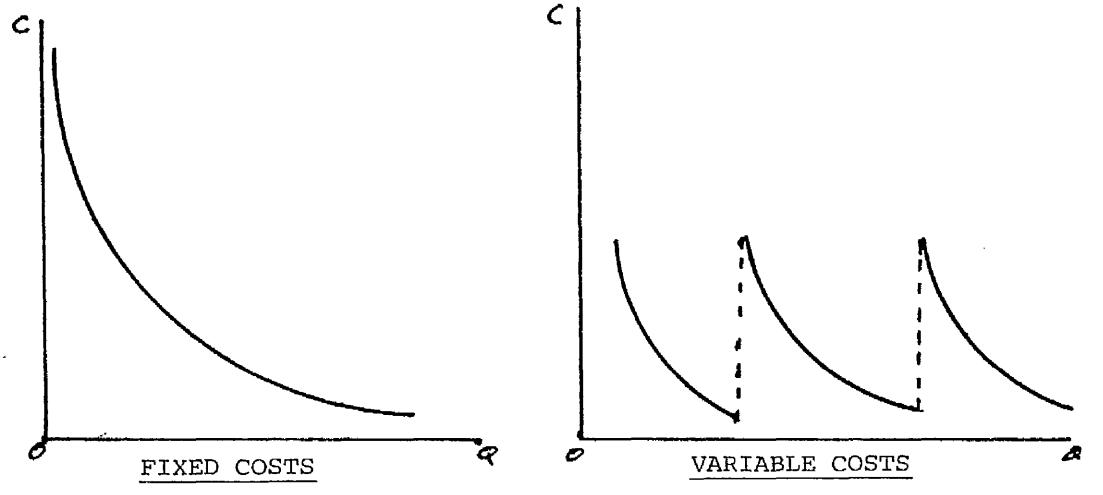


Figure 3.5 Fixed and variable cost functions of a eurobank

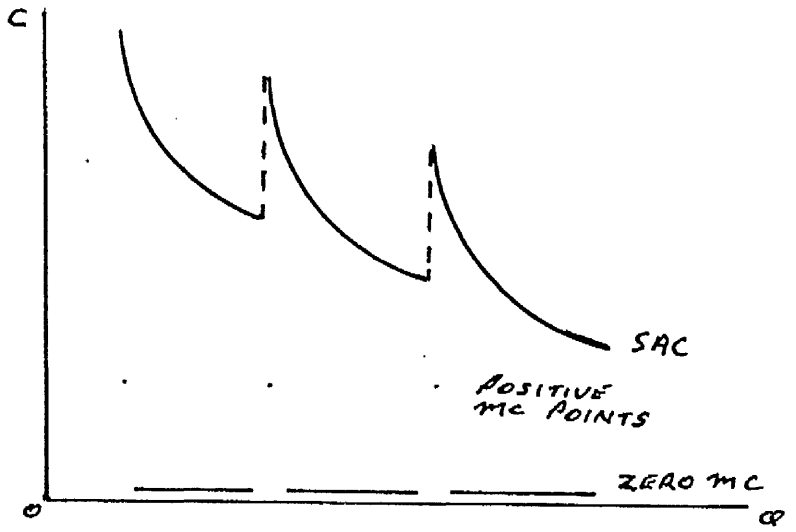


Figure 3.6 Short run average total cost and marginal cost functions of a eurobank

The fixed costs function is of the traditional form. The average variable cost function exhibits indivisibilities but assumes constant cost of variable factors. The average total cost function shows the indivisibilities of the variable factor. The marginal cost function shows such cost being equal to the cost of the variable factor for the first unit produced and zero thereafter until the variable factor is fully utilised and a new unit of that factor is employed.

Long-run Cost Functions

Traditionally the long-run in economic analysis relates to the time period when all factors, particularly fixed factors, are variable. Again, traditionally, fixed factors include plant and buildings. In this analysis it is considered that buildings, information technology systems and professional staff, although treated as fixed assets, are not the major constraint on the size of the banking function. Here we ignore external constraints such as prudential regulation. The major constraint becomes the bank's standing in the market. This standing should be considered from two angles; one is the bank's standing as a taker of deposits. This in turn will be related to its financial condition. The second angle is the bank's standing as a lender. This

latter point has a considerable impact upon the economies of scale in lending which the bank can enjoy.

To explain this we must consider the economies of scale associated with a single loan transaction. The larger the loan, the lower will be the average total cost per currency unit loaned. However, a bank can only make large loans or take large participations in syndicated loans, and maintain the required degree of portfolio diversification, if it has a large balance sheet.

Furthermore, it is known that interest rate tiering exists in the interbank market (Ellis 1981). If large size means lower perceived risk, large banks will incur lower funding costs than small banks. Moreover, borrowers prefer to issue loan mandates to the larger banks because the borrower is more confident that a larger bank can underwrite the transaction. The members of the syndicate management group are well placed to take large shares of each loan, enjoying greater economies of scale in each transaction.

In addition, the larger the loan participation, the higher the proportion of front end fees (ref ch4 p171),thus a bank making large loans will not only enjoy lower average costs per transaction but also higher average revenue. This results in higher profitability, a better capital assets ratio and a better reputation in the market.

Clearly the ability of the bank to increase its scale of operation and the size of average transaction, assuming a constant degree of portfolio diversification, depends upon the market's perception of the bank. This perception in turn depends upon the bank's past performance.

It is considered by the writer that changing this perception has a longer time scale than changing any of the tangible fixed assets such as buildings, information technology systems or staff.

In order to increase the standing of the bank and thereby enjoy the economies of scale associated with large transactions, it is neces-

sary for the bank to grow and, in practice, to grow steadily and continuously. Thus the flow of new loans from a bank and their average size is positively related to that bank's existing stock of loans.

Therefore, although in the long run the banks may enjoy economies of scale associated with larger information technology systems, and a higher calibre of staff attracted to larger, and therefore assumed more prestigious institutions, they also enjoy substantial economies of scale due to increased transaction size. This increased transaction size is possible as the bank's balance sheet and reputation increase; this reputation itself being positively related to balance sheet size.

The result of this hypothesis is depicted in the following diagram of the long run cost functions:

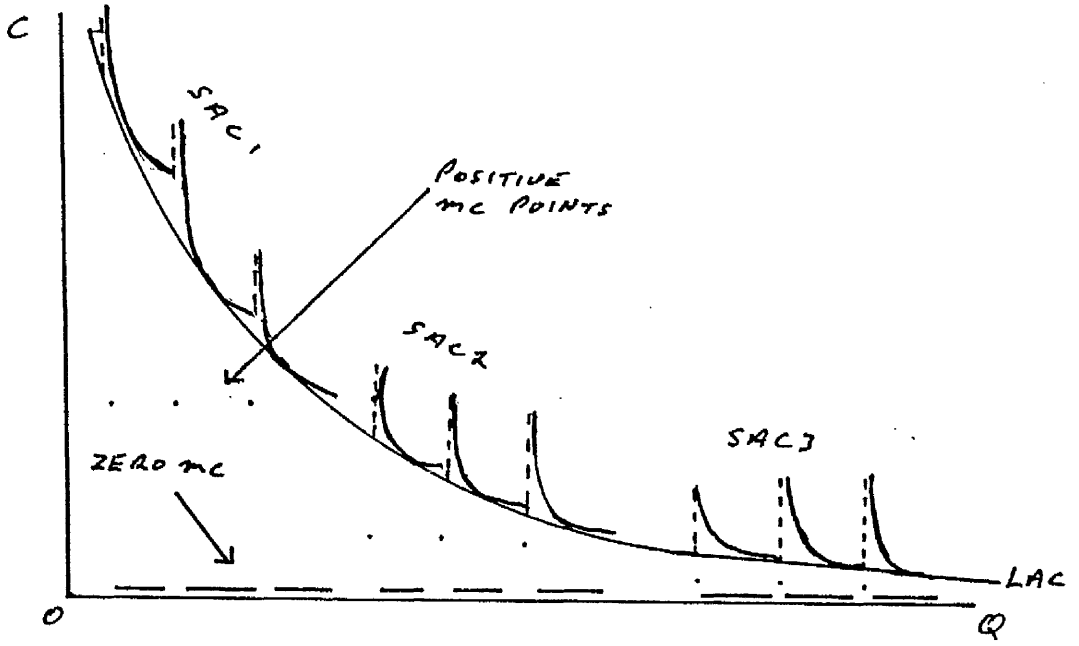


Figure 3.7 Long run costs functions of a eurobank

The falling long run average cost results from economies of scale due to increasing average transaction size. As total balance sheet increases, the bank can supply more loans in larger average transactions and thus operate at successively lower sets of short run cost functions. Thus each successive scale of balance sheet results in a larger scale of transaction, each having a lower average cost per currency unit loaned. This includes lower marginal cost at the point

of hiring an additional indivisible unit of the variable factor. Moreover, although marginal cost is often zero, the positive point of marginal cost falls as average transaction size rises. Thus growth of the bank's balance sheet by allowing the bank to operate at lower average transactions cost allows the bank to operate at a point nearer to where MC = MR = 0.

Furthermore, where increased transaction size results in greater fee income or even higher spread, the bank's average and marginal revenue will shift to the right, again enhancing balance sheet size through retention of larger profits.

On page 109 above the importance of marketing in the growth of the eurocurrency market was noted. If we extend the role of marketing to the individual bank, we can see that the revenue curves are shifted to the right thus enhancing the growth of the bank. If marketing costs exhibit diminishing marginal productivity, they will militate against the falling positive marginal cost point. However, for cost per currency unit loaned to rise as a result of marketing effort, marketing costs per currency unit must outweigh the economies of scale in transactions costs resulting from larger average size of transactions possible from the increased size of the total banking operation.

Therefore, balance sheet growth and its attendant marketing and public relations exercises are important in the bank's utility function in that they allow for growing profits without the bank reaching the profit maximising condition which any way may be close to MC=MR=0. Incremental profits are important because these supplement the bank's capital base. A growing capital base is required in order to avoid being under-capitalised as the balance sheet grows.

This analysis of the short and long run cost functions does not by itself explain the quantity of loans supplied. For that it is necessary to analyse the bank's revenue functions as well.

The Revenue Functions

Because each eurocurrency loan is individually negotiated, often with a considerable degree of confidentiality, and because the loan will incorporate some non price factors in its terms, each bank or syndicate of banks can differentiate its product. As such it will face a negatively sloped demand curve for its product. However, this differentiation may only be slight and therefore the substitution between different banks' products is considerable.

This ability to choose between banks according to the terms of the loan is enhanced by the fact that the market is uncartelised. Moreover, because eurobanks, unlike domestic banks, often do not require an established banking relationship with the prospective borrower before lending, it is possible to approach many banks separately and compare the terms of loans. Therefore the price elasticity of demand for loans from any one syndicate will be highly elastic.

Accordingly, the revenue curves of a eurobank are characterised by the diagram below:

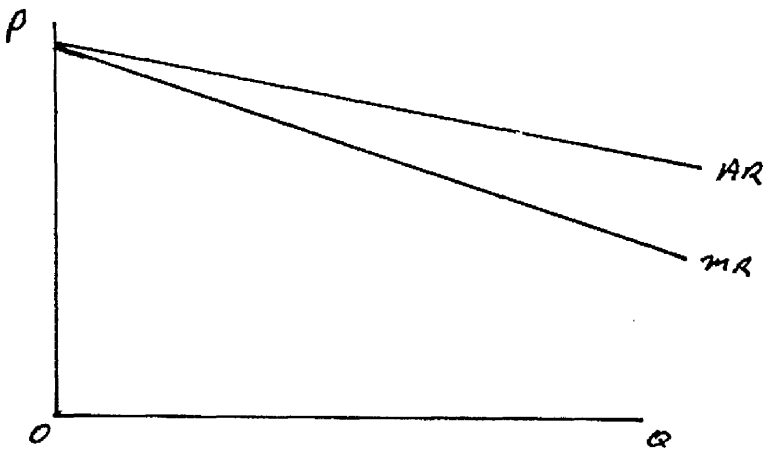


Figure 3.8 The revenue functions of a eurobank

The Complete Model

The barriers to entry into eurobanking are very low (as distinct from the barriers into banking generally) for institutions already engaged in domestic banking. In effect such a change requires only the establishment of a foreign currency bookkeeping system. Accordingly, the ability of firms to enter and leave the industry is considerable. It is therefore considered by the writer that the eurobanking can be characterised by an adaptation of the monopolistically competitive model suggested by Chamberlin (1950).

Chamberlin suggested that super profits would be competed away by firms entering the industry, thus shifting the demand curve downwards until the demand curve is tangential to the long run average cost curve. In the process the demand curve may become more elastic. In Chamberlin's model a unique profit maximising solution was possible because of the use of linear revenue curves and 'u' shape cost curves.

In the current analysis competition in the short run will shift the average revenue curve until it is tangential to the short run average cost curve. In the long run competition will ensure that the average revenue curve is tangential to the cost curve of whichever scale of lending function is chosen. Thus the dashed line marked AR in figure 3.9 below represents a locus of points of long run equilibrium average revenue. The solid line marked LATC represents a locus of points of equilibrium long run average total cost. In both cases long run equilibrium is defined as tangency between average revenue and average total cost for whatever scale of lending function is chosen. The relevant marginal revenue curve will be that associated with the average revenue curve tangential to the chosen cost function.

Because each loan is individually negotiated, the terms can be related to the resource costs of producing that loan. If the price charged were above average cost, super profits would arise and be competed away (maybe instantaneously through competitive tendering for loan mandates). If a price less than average cost is charged, a loss

will ensue which the bank can avoid by not making the loan. Therefore, provided that the bank is aware of its cost functions when they negotiate the terms of loans, they do not need to enter the market for any individual loan that will result in a loss. In effect the lending banker exhibits perfect mobility of resources in respect to any one loan analogous to that hypothesised in the perfect competition model.

Thus, with competition for loan mandates removing super profits and the ability to avoid losses by not entering into lending on unfavourable terms, the banks will be able to achieve an average revenue equal to average cost.

If one bank had resource costs significantly above its competitors, it would be unable to lend competitively and would leave the market altogether. The deposit funds would then flow to the more efficient banks that can make a normal profit from loans priced at the then existing average revenue.

With the behaviour of the marginal cost function being a positive but declining series of points, or zero, due to the indivisibility of the variable labour input, it is always optimal for the banker to operate at a point where marginal cost is zero. Given the highly elastic demand function for the individual bank as postulated above, and the ability of marketing to shift the revenue functions to the right, the profit maximising criterion of MC = MR will not be an effective constraint upon bank operations even where profit growth is important in the bank's utility function provided that there is an additional positive constraint. The effective constraints upon bank balance sheet growth are the minimum acceptable return on total assets and a maximum acceptable perception of risk. The greatest of these two becomes the binding constraint.

The relationships between the revenue functions, marginal cost and long run average cost on one hand and the return on total assets and risk constraints on the other are shown below:

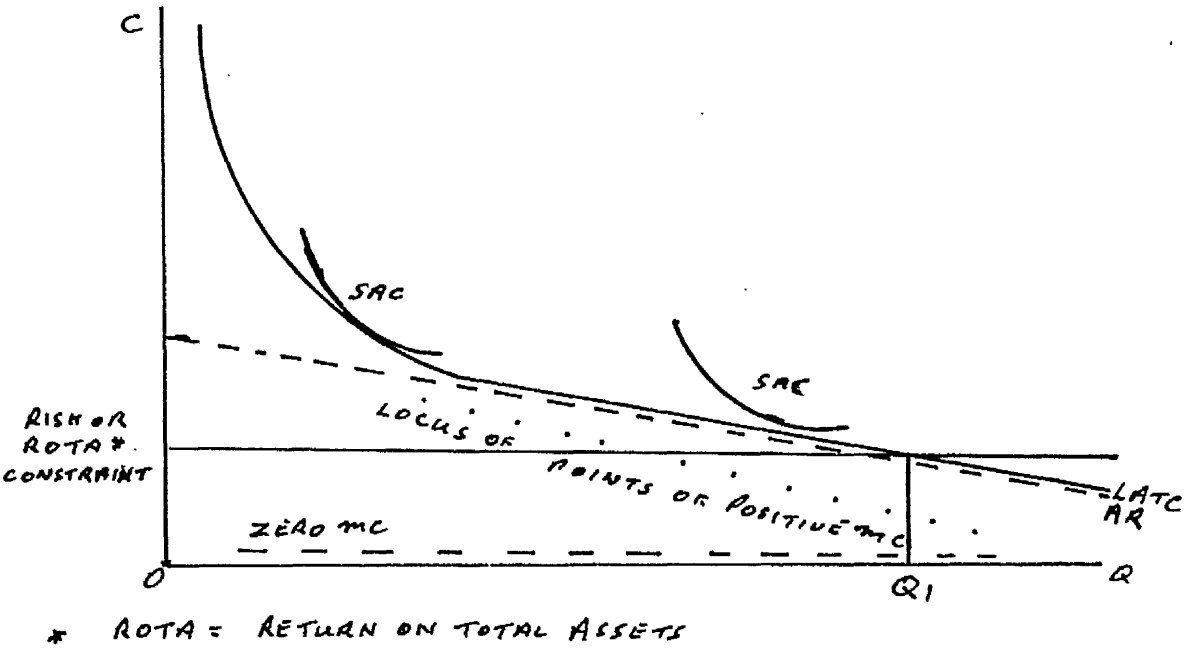


Figure 3.9 The long run equilibrium of a eurobank

Of the two constraints suggested, it is considered by the writer that the risk constraint will be the most volatile in that perception of risk will depend upon the degree of diversification of the loan portfolio and the variability of the income stream from that portfolio. As the bank's portfolio increases, greater concentration of that portfolio may result, particularly if new lending is taken up by one particular group of borrowers, as happened with bank lending to developing countries during the 1970's. Alternatively, systematic elements of risk may affect all borrowers. Macro economic phenomena could be particularly influential in this respect.

On the other hand, the perception of depositors, shareholders and regulatory authorities of what is the minimum acceptable return on total assets is likely to change only slowly; at least in relation to the changing circumstances of certain groups of the bank's borrowers.

It can be seen from the diagram above that if perceived riskiness rises, then the quantity of loans provided will be reduced, while a reduction in perceived riskiness will result in increased lending. The

return on total assets constraint operates in an analogous manner. This reaction may be considered as credit rationing but it must be stressed that this analysis relates to a single bank. For credit rationing to be imposed by a whole market all banks will have to have similar perception of risk and similar degrees of risk aversity.

It may very well be that the perceived risk constraint as hypothesised here explains the slowdown in the growth of bank lending to developing countries observed in the last two years.

If banks do indeed behave as suggested in this chapter, it is more appropriate to consider growth to be the major factor in the bank's utility function.

The suggestion that the maximisation of profits may not be the only or even dominant element of a eurobank is supported by anecdotal evidence (Euromoney 1978, 1982) and responses to the writer's survey discussed in chapter seven of this thesis. This evidence suggests that market share or balance sheet size were important objectives in the late 1970's. Davis (1981) suggests that the balance sheet growth was only just giving way to profits as an important objective at the time that he was writing.

Further evidence that balance sheet size is an important corporate objective comes from the continued publication of rankings of banks by the quantity of eurocurrency loans written. These rankings are published in Euromoney and Institutional Investor. As these publications rely upon popular demand for their existence, the continued publication of these rankings indicates that they provide a form of knowledge required by readers - mostly practising bankers.

The importance of market share and balance sheet size may also be explained by the work of Marris (1964) and Baumol (1959) suggesting that executives' salaries are related to growth of the firm or sales revenue. For a bank, sales growth and balance sheet growth are identical.

Furthermore, balance sheet size may be an important determinant of depositor confidence, not least because a large portfolio allows greater diversification of the unsystematic element of risk. Moreover, balance sheet size may give borrowers confidence that loan requirements can be provided by the bank. This is important where the borrower may be wishing to expand its market share.

The bank's objectives need not be of equal dominance, indeed the dominant objective may change during the life of the organisation, but the market behaviour will be similar; this is suggested by Davis (1981) and Euromoney (1982b). It is in fact quite reasonable to expect new banks to concentrate on balance sheet growth until their presence is felt in the market and then to give profits more priority. This is particularly so given the advantages of depositor and borrower confidence that a large balance sheet confers upon a bank. Responses to the survey reported in chapter seven suggest that bank corporate objectives have indeed changed during the 1970's and early 1980's.

3.4 Conclusion

In conclusion, it is considered that the growth of the eurocurrency market is influenced by the portfolio preferences of depositors, borrowers and lenders. These preferences are influenced by several factors including price advantages of eurobank transactions, government controls on domestic markets, tastes and a learning process both enhanced by marketing efforts and the corporate objectives of the eurobanks. These corporate objectives manifest themselves in the portfolio preferences of the lenders.

The fixed coefficient multiplier approach is inappropriate to explain euromarket growth because of flexibility of the reserve base and the redeposit ratio, as well as inadequate measures of the reserve base and total euromarket lending. The fact that the multiplier approach is inappropriate does not of itself preclude multiple credit creation by

the eurobanks. In fact, the theoretical analysis of the influence of marketing and relative prices upon portfolio preferences suggests that, as the market matures, the redeposit ratio and thus multiple credit creation could increase. The existence or otherwise of government controls will also influence the growth of the euromarkets.

This chapter has also shown that the corporate objectives of growth maximisation or long run profit maximisation are compatible with the cost and revenue functions of eurobank lending. Responses to a survey reported in more detail in chapter seven of this thesis confirm that asset growth was an important corporate objective of eurobanks during the 1970's. The fulfilment of this objective would have a considerable influence upon the growth rates of the euromarkets during that period.

The growth of the eurocurrency markets is of crucial importance to the developing countries because these markets have become such an important source of external finance. However, continued growth of the euromarkets does not guarantee an adequate supply of eurobank credit to developing countries. The portfolio preferences of the banks are of utmost importance. These preferences will be influenced by the expected rate of return and the perceived risk attached to such loans compared to those available on alternative assets. The ability to manifest these preferences will depend upon the constraints bearing upon the eurobanks at any point in time.

The next chapter analyses the financial terms attached to eurocurrency loans and eurobonds in order to ascertain the determinants of the expected rate of return on such assets.

Chapter 4

THE FINANCIAL TERMS OF BANK FINANCE TO LDC'S

4.1 Introduction

This chapter analyses the determinants of the interest rate related costs of eurocurrency bank loans to, and eurobond issues by, LDCs. These interest rate costs are determined by factors that influence the level of interest rates generally and by factors that influence the interest rates on bank loans or bond issues specifically. Therefore the structure of this chapter is in three parts.

Section 4.2 analyses those factors that influence eurocurrency interest rates generally. In particular:

Inflation and government economic policy of the country whose currency is being loaned;

The currency of the loan;

The term structure of interest rates;

The relationship between eurocurrency and eurobond interest rates.

Section 4.3 analyses those factors that influence interest rate costs specific to eurocurrency loans, in particular:

Spread and fees.

Section 4.4 analyses those factors that influence interest rate costs specific to eurobond issues, particularly:

The risk premium;

Marketability.

4.2 Factors Influencing the Level of Eurocurrency Interest Rates Generally

There is a very extensive literature on the determination of interest rates generally. One view is that interest rates are determined by the supply and demand for existing securities (Keynes 1936, Metzler 1951). Because the stock of existing securities is very large relative to the flows of new securities to each market, the supply and demand for new securities will not affect interest rates directly (Metzler, op cit).

In contrast with this view, Horwich (1964) and Moore (1968) consider that interest rates are influenced directly by the supply and demand for new securities. The analysis by Moore noted the importance of the speed with which existing securities holders can make portfolio changes once they perceive themselves to be in disequilibrium. Van Horne (1970) makes the point that it is not the stock of existing securities that is important but the level of transactions in those securities (p37). This point is of direct relevance to the eurobond market where there is an active secondary market in most issues; investors therefore have the choice of investing in existing securities or new securities and therefore the yields on existing securities and new securities will converge. On the other hand, the limited secondary market in syndicated loans would suggest that the yield on new loans need bear little relation to that on existing loans.

It is clear, therefore, that yields on marketable securities, whether existing or new issues, will depend upon the interaction of the supply and demand for both types of security. The degree of interaction will depend upon the relative size of the primary market compared with that of the secondary market and on the elasticity of the arbitrage schedules between the two markets. On the other hand, the inability to arbitrage out of existing holdings on non marketable debt of syndicated loans means that the yield on new debt will be more strongly influenced

by the supply and demand for new debt rather than the existing stock of debt.

Given that interest rates equate the supply and demand for credit in markets free of restriction, it follows that arbitrage and speculation across the whole spectrum of credit instruments equilibrates the level of interest rates between markets. If we make the assumptions of perfect competition in all credit markets and a riskless society, the rate of interest would be determined by the interaction of society's positive rate of time preference and the marginal efficiency of capital. Savers' rate of time preference would influence the supply of credit, and borrowers' marginal efficiency of capital would influence the demand for credit.

If we assume that economic agents are utility maximisers, then it is possible to postulate that agents will demand assets and supply liabilities such that the ratio of marginal utility to price on each asset and liability is equal. It is, of course, necessary to ignore the change in the sign between assets and liabilities.

The marginal utility of holding real assets is related to the physical services they perform, whether it be in consumption or production. Financial assets on the other hand do not provide any consumption or production services. Instead they provide a positive financial flow in the form of a rate of return. The utility of this return can be analysed by way of the popular Tobin-Markowitz two-parameter utility function, where utility is positively related to the rate of return and negatively related to the risk associated with acquiring the financial asset. (This model will be discussed in more detail in the section covering spreads on syndicated loans.) In particular, the greater the risk attached to such an investment, the greater must be the rate of return required by the investor.

The utility of issuing liabilities can also be considered in terms of a two-parameter utility function. The variance of the probability

distribution is related to the market prices of the financial liability. However, for a fixed interest liability, the borrower is not concerned with this variance as he is certain as to coupon payments and repayment of principal. In such a case the utility function has only one parameter, ie the yield or coupon payable.

In the case of floating rate liabilities, such as floating rate notes and the majority of bank loans, the appropriate utility function will have two parameters because of the risk of fluctuations in the coupon costs.

Although an investor will be able to reduce the risk for a given income by diversifying the portfolio of assets, the ability to diversify liabilities is limited because of the lumpiness of the costs of issuing liabilities and because the financial risk of the issuer stays the same. Nevertheless, if the utility of assets is greater than that of issuing liabilities, the economic unit can maximise its utility by increasing its liabilities and acquiring assets.

The equating of marginal utilities between assets and liabilities by equating the rate of time preference with the marginal efficiency of capital will not be possible once we relax the assumption of perfect credit markets.

Of the many imperfections actually found in credit markets, those that segment markets are particularly important to this study. Perceived differences due to different currencies of denomination or regulatory differences mean that the real rate of interest may differ between markets which are thus segmented. Nevertheless, conceptually at least, a real rate of interest can be calculated for each credit market. However, this real rate is not observed in credit markets because in reality these markets are not riskless.

4.2.1 Inflation

The one risk which will influence all investors in all credit markets denominated in a particular currency is the risk of loss of

purchasing power of capital resulting from inflation. It does not matter whether one hypothesises that expectations are developed rationally or adaptively; provided investors perceive the risk of inflation, they will require to be compensated for bearing that risk.

The inflation rate that is important in this study is the rate applicable to the currency in which a eurocurrency loan or eurobond issue is denominated.

The following chart, supplied by Bankers Trust Company, London, shows the close correlation between eurodollar interest rates and the US inflation rate.

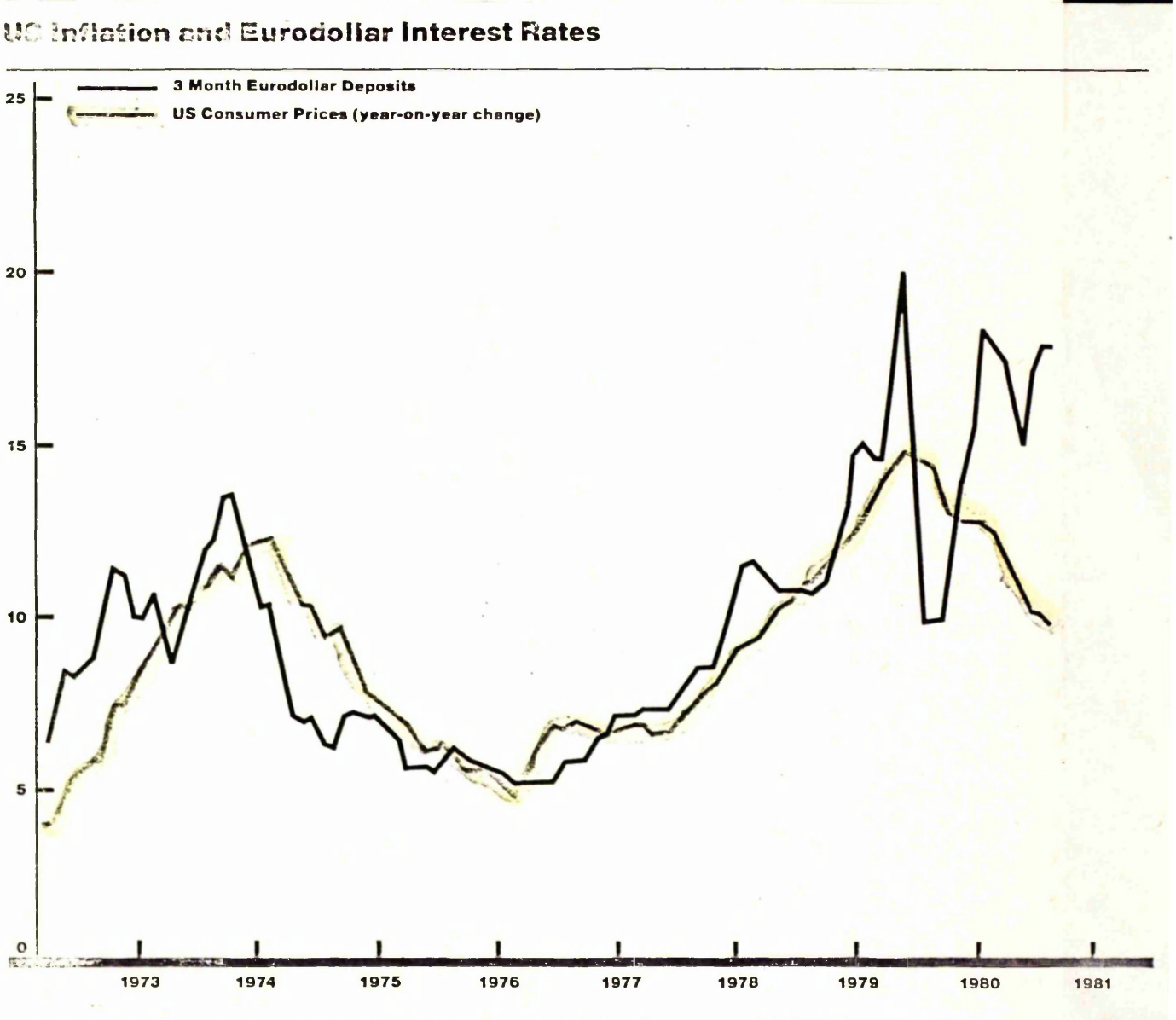


Figure 4.1 Relationship between US inflation rates and eurodollar interest rates

This chart also shows the influence of domestic monetary policy upon interest rates. The use of monetary policy to directly influence inflation or the exchange rate can cause interest rates to deviate from their relationship with the rate of inflation.

The upwards movements of the interest rate at the end of 1978 and again in the autumn of 1979 are good examples of the influence of monetary policy. The first was a package to support the US dollar, and the second followed a general tightening of monetary policy following the appointment of Volcker as chairman of the Federal Reserve Board in July 1979.

Clearly the information provided in this diagram would support the suggestion that investors demand higher interest rates as inflation rises and that in such circumstances borrowers are willing to concede higher rates.

4.2.2 The Influence of the Currency of Denomination

It is to be expected that in any two markets whose goods are close substitutes for each other, the absence of market imperfections will ensure that arbitrage will keep the price of each good close to that of the other. Such is the situation between the domestic markets and the euromarkets for assets and liabilities denominated in the same currency. In effect the euromarkets are extensions of the similar domestic markets, the rates in the two markets being influenced by the activities of arbitragers and the market imperfections that impede arbitrage.

Thus, the rate of interest on bank loans or bonds to the same borrower in the same currency and with the same maturity etc, but differing only by being in the domestic market or the euromarket, will be the same unless arbitrage is inhibited by market imperfections. Thus, eurodollar rates are likely to be the same as domestic dollar rates in the absence of market imperfections and eurosterling rates will be close

to domestic sterling rates in similar circumstances.

Furthermore, it is to be expected that the currency structure of euromarket interest rates will reflect differences in the cost of obviating foreign exchange risk through the forward exchange market as hypothesised by the Interest Parity Theorem. Therefore, to the extent that forward exchange rates reflect expectations of exchange rate changes, the currency structure of euromarket interest rates will reflect those expectations.

However, in discussing the influence of currency on the level of euromarket interest rates, we must concentrate on one currency at a time and concern ourselves with the level of interest rates on assets and liabilities denominated in that currency. As such, we are not concerned, in this section, with the currency structure of interest rates and the interest parity theorem. We are, instead, concerned with domestic and euro interest rates in the same currency and the market imperfections between these two sectors of the market.

4.2.3 The Relationship between Euro Interest Rates and Domestic Money Market Interest Rates

There is already a considerable literature on this topic including Aliber (1978), Clendenning (1970), Dufey and Giddy (1978), Johnston (1979) and Lutz (1974).

The currency backing of a eurocurrency market is held with banks in the national money market of the currency concerned. Accordingly, if there were no impediments to the international movement of funds and if the assets and liabilities of the eurocurrency market were similar in nature to those in the national money market, depositors and borrowers would be indifferent between the two markets and interest rates would be the same in each due to the activities of arbitragers. Differences could be due to:-

1) Differences in the liquidity of each market as represented by the size of each market.

2) Differences in jurisdictional risk.

3) Controls on the international flows of financial capital.

4) Differing degrees of market imperfections in each market.

Liquidity

Liquidity in this context is related to market size because market size influences the marketability of the securities in question. Table 4.1 compares the gross size of the eurodollar market with the total of bank deposit liabilities in the USA. It can be seen from the size and rate of growth of the eurodollar market that liquidity is unlikely to be an important influence upon differences in interest rates.

Table 4.1 Size of US $ domestic and eurobank deposit markets

	Time & demand deps all US banks[1]	Gross size of euromarket Morgan Guarantee estimate[2]
1974	747.9	395
1975	786.3	485
1976	838.2	595
1977	939.4	740
1978	956.0	950

Sources: 1. Federal Reserve Bulletin, various issues
Table A16 All Commercial Banks
Last Wednesday of month series
2. Morgan Guarantee Trust 'World Financial Markets'

The Impact of Jurisdictional (Political) Risk

Jurisdictional risk is the non-zero probability that restrictions or controls in a sovereign area will frustrate the completion of a financial transaction.

A transaction in an international money market is subject

to at least two sovereign powers. There is, therefore, additional jurisdictional risk associated with euromarket transactions because a second authority can frustrate the transaction. In particular, in the eurodeposit market the risk is that exchange controls will be introduced removing non-resident convertability in the jurisdiction where payment is to be made. Secondly, a eurobank's assets may be seized for political reasons and thirdly there are no lender of last resort facilities in the euromarkets. In the euroloan market there is the risk that the currency in which the loan is denominated may become politically unacceptable as a means of payment.

The concern over the imposition of non-resident convertability may be exaggerated. A country that imposed such controls would adversely affect its international credit rating. Further, financial markets get ample warning of such dramatic action because it is usually preceded by controls on residents' international transactions, imports and capital flows (Dufey & Giddy 1978, p187).

It is unlikely that a government will be able to take over the assets of a eurobank because a eurobank will operate in several financial centres. The repayments of loans and payments of interest could be redirected to a branch that is not subject to the controls.

The concern for depositors' safety may be unfounded because, although there is no official lender of last resort to the euromarkets, bank head offices would have to support their eurobranches if they want to maintain confidence in their domestic banking business.

A further point which reduces the expected incidence of jurisdictional risk from this factor is that the Bank of England has '..... intimated on various occasions that it would, in a crisis situation, bale out an individual bank in difficulties rather than expose the standing and integrity of the City as a whole to doubt', (Shaw 1978, p124).

This writer therefore considers that additional jurisdictional risk

is an insignificant influence upon the differences between euromarket and domestic market interest rates.

Controls on the Movement of Capital

Capital controls tend to have one of two aims, either to restrict the flow of financial capital from national financial markets to foreign, including euro, financial markets or to restrict the inflow of financial capital from abroad. The USA instituted the former type of control from 1965 to 1974. Germany and Switzerland, on the other hand, have experimented with the second type of control.

Capital controls have the effect of segregating the national money market from the euromarket. Therefore, the interest rates prevailing in the two markets will be to some degree independent of each other. In particular, the activities of arbitragers will be restricted and their equilibrating influence on the markets will be lost.

If the controls aim at stopping funds leaving the national money market then, ceteris paribus, interest rates in the national market will fall and rates in the euromarket will rise. Conversely, if the controls aim at restricting the inflow of funds to the national money market, ceteris paribus, the rates in the euromarket will fall while rates in the domestic market will rise.

Table 4.2 shows the differences between New York loan rates and eurodollar loan rates for two periods, January 1972-December 1973 and January 1977-December 1978. Capital controls were in existence limiting flows of funds from the national to the euromarket during the first period but not for the second period.

When considering interest rates, it is the effective rate and not the nominal rate that is important.

The New York loan rate has been adjusted to take account of the fact that it is custom for borrowers to have to maintain part of the loan proceeds in a compensating current account balance which does not earn interest. The amount of compensating balances held is assumed to be 15% of the loan proceeds (Dufey & Giddy 1978, p51).

Table 4.2 Impact of capital controls of eurocurrency interest rates

	NY loan rates and euro loan rates during a period of outward capital controls in USA					NY dollar loan rates and euro dollar loan rates during a period when outward capital controls did not apply in USA			
	1	2	3			1	2	3	
Date	NY Loan Rate	Adjusted for 15% Comp Bals	Euro Loan Rate	3-2	Date	NY Loan Rate	Adjusted for 15% Comp Bals	Euro Loan Rate	2-3
1972 March	4.75	5.59	6.32	0.73	1977 March	6.25	7.35	5.69	1.66
June	5.25	6.18	6.0	-0.18	June	6.5	7.65	6.12	1.43
Sept	5.5	6.47	6.75	0.28	Sept	7.25	8.53	7.24	1.29
Dec	5.75	6.76	6.63	-0.13	Dec	7.75	9.12	7.56	1.56
1973 March	6.5	7.65	9.38	1.73	1978 March	8.0	9.41	7.87	1.54
June	7.75	9.12	9.75	0.63	June	9.0	10.59	9.06	1.53
Sept	10.0	11.76	11.01	-0.75	Sept	9.75	11.47	9.81	1.66
Dec	9.75	11.47	10.75	-0.72	Dec	11.75	13.82	12.06	1.76

Source: Columns 1 and 3 World Financial Markets, various issues

Analysis of Variance Test[1]

$F^* = 23.429$ Degrees of Freedom $V_1 = 1$ $V_2 = 42$

$F^* > F$ at 1% and 5% levels of confidence

The null hypothesis is rejected and it is accepted that there is a significant difference between samples.

[1]Calculated on monthly data of which table 4.2 gives quarterly observations

There is a break in the data for the years 1974 and 1975. This is because a crisis of confidence occurred in the euromarkets following the failure of the Cologne-based bank, I D Herstatt, on 26 June 1974. Such a crisis would have influenced the differential between national and euromarket rates. Accordingly, data covering this period has been omitted from our analyis of the impact of capital controls.

The figures in table 4.2 show that the differences between the New York dollar and eurodollar loan rates were smaller in the former period when capital controls were in operation than in the latter when they were not. Indeed, during the first period eurodollar loan rates often exceeded New York rates. The statistical significance of the differences in interest rates is confirmed by the analysis of variance test also reported in table 4.2. We may therefore conclude that controls on the international movement of financial capital will influence eurocurrency interest rates.

Market Imperfections

Money markets display market imperfections due to:-

1) Regulatory constraints such as interest ceilings, taxes and reserve requirements.

2) Institutional factors such as credit rationing, lack of cash transmission mechanism, economies of scale in transactions.

3) Oligopolistic market structure due to barriers to entry.

4) Imperfect knowledge on the part of the operatives in the market.

To the extent that eurocurrency markets have fewer market imperfections than domestic money markets of the same currency, we would expect to see eurodeposit rates higher and euroloan rates lower than their domestic equivalents.

In particular, the reserve requirements imposed upon domestic banking but non existent in eurobanking restrict the profitability of domestic business. Accordingly, eurobanks can offer higher deposit rates and lower loan rates while maintaining their level of profitability.

The lack of cartelisation will allow eurobanks to be more competitive. In order that they compete with domestic banks, they must offer higher deposit rates and lower loan rates on similar transactions.

The existence of credit rationing systems in domestic banking rather than price adjustment, as is prevalent in euromarkets, will lead to differences in interest rates between the markets.

There are unlikely to be differences in interest rates between markets due to differing degrees of knowledge because the major operatives in each market are the same viz the banks and large corporations.

There are economies of scale in the eurobanking due to the fact that the average size of transactions is greater in the eurocurrency market than in the domestic banking market. The impact of economies of

Table 4.3 Impact of selected market imperfections upon the relationship between US domestic and eurodollar interest rates

		Loan Rates				Deposit Rates			
		1	2	3	4	5	6	7	8
Date		NY Loan Rate	Adjusted for 15% Comp Bals	Euro Loan Rate	Diff 2-3	NY Deposit Rate 3 month CD	Adj for FDIC & Reserve Ratio	Euro Deposit Rate	7-6
1976	March	6.75	7.94	6.25	1.69	5.20	5.570	5.50	-0.070
	June	7.25	8.53	6.63	1.90	5.75	6.155	6.0	-0.155
	Sept	6.75	7.94	6.38	1.56	5.25	5.623	5.75	-0.127
	Dec	6.0	7.06	5.50	1.56	4.70	5.038	5.0	-0.038
1977	March	6.25	7.35	5.69	1.66	4.85	5.198	5.19	-0.008
	June	6.5	7.65	6.12	1.43	5.35	5.730	5.75	+0.02
	Sept	7.25	8.53	7.24	1.39	6.45	6.9	6.87	-0.03
	Dec	7.75	9.12	7.56	1.56	6.8	7.272	7.19	-0.082
1978	March	8.0	9.41	7.87	1.54	6.95	7.432	7.50	+0.068
	June	9.0	10.59	9.06	1.53	8.05	8.602	8.69	+0.088
	Sept	9.75	11.47	9.81	1.66	8.90	9.506	9.44	-0.066
	Dec	11.75	13.82	12.06	1.76	10.90	11.634	11.69	+0.056
1979	March	11.75	13.82	10.87	2.95	10.0	10.677	10.50	-0.177
	June	11.50	13.53	10.87	2.66	9.9	10.570	10.50	-0.070
	Sept	13.50	15.88	13.12	2.76	12.10	12.91	12.75	-0.160

Sources: Columns 1, 3, 5 and 7 from World Financial Markets published by Morgan Guarantee Trust Company of New York

scale on the costs of lending has been discussed in chapter three of this thesis.

The figures given in table 4.3 show the impact of certain market imperfections found in US domestic markets. One of these is the requirement to hold compensating balances already alluded to on page 145 above. Two others include the holdings of reserve assets and the payment of insurance premiums on domestic deposits; neither of these requirements are found in the eurocurrency markets.

Column 8 of table 4.3 shows how small the differential between domestic and eurodeposit rates is when the domestic rate is adjusted for the impact of the market imperfections mentioned above. Indeed, the differential is not significantly different from zero at the one per cent level as the results of a t test given below indicate.

Mean of differences between domestic & euro deposit rates Column 8 Table 4.3	Standard deviation	Standard error of mean	T value
-0.055	0.172	0.026	-2.6

Probability of T value

0.036 > 0.01 ∴ result not significant at 1%

< 0.05 ∴ result significant at 5%

What is particularly interesting about table 4.3 is the size of the difference between euro and domestic loan rates compared with that of the deposit rates. The difference in loan rates is much greater than that of the deposit rates. This is compatible with the suggestion made in chapter three that banks are producers of loans and deposits are the raw material of the loan output. Thus, we would expect the competitive differences to show up more in the loan market than in the deposit market as the banks strive to market their loan products.

Summary of Relationship between Eurocurrency and National Markets

Thus we see that differences exist between rates of interest on similar transactions in national money markets and eurocurrency markets. Even when capital controls do not exist, these differences occur, therefore other factors cause the arbitrage schedule between the national and the eurocurrency market to be less than perfectly elastic.

We have discounted the effects of differing degrees of liquidity at least for the eurodollar market. We consider additional jurisdictional risk associated with the London eurodollar market to be very small or non existent.

The conclusion must be that market imperfections are the main determinant of the differential between euro and domestic deposit rates. On the other hand, the even larger negative differential in favour of the euroloan market is partly explained by market imperfections. However, this result is also compatible with greater competition in the euroloan market and the suggestion that the output of a eurobank is more concentrated in loans than the loan/deposit combination of domestic banks.

4.2.4 The Term Structure of Interest Rates

The theory of the term structure of interest rates attempts to explain the relationship between yield and maturity on securities that differ only by the length of time to maturity. However, it must be noted that the manifestation of the term structure will be different in the euroloan and floating rate loan markets from that in the eurobond market. The vast majority of the literature on this subject relates to fixed interest bond markets and therefore the methodology can be directly transferred to any studies of the fixed interest eurobond market. However, the pricing techniques of the other two markets and the relatively small secondary market in bank loans makes such methodology

inappropriate in studies of these markets.

Pricing of eurocurrency syndicated loans and floating rate notes consists of a reference rate eg LIBOR to which is added a spread or margin and fees. Thus, the term structure of this interest rate related price depends upon the term structure of the reference rate and the term structure of the spread.

Moreover, the term structure of the interbank rate will, through arbitrage, be strongly influenced by the term structure in the domestic interbank market of the same currency. Comments by bankers to the writer suggest that the term structure of the spread manifests default risk and not expectations of interest rate changes, Hicksian liquidity premiums, etc.

Indeed, for many loans the spread is not altered during the life of the loan. For others there is a contractual agreement to raise the spread during the later years of a loan's life. Even then the spread is usually only altered once or twice. Discussions with lending bankers suggest that this is to compensate for the bankers' greater uncertainty due to the loan being outstanding for a longer period.

The floating rate nature of most bank loans and of floating rate notes will preclude a term structure in these markets exhibiting Hicksian liquidity premium ie compensation for declining secondary market prices due to rising interest rates. Such a premium is also absent from the interbank market where there is no secondary market in deposits because, by definition, there can be no fall in the secondary market value. This point is discussed in more detail on page 160 below.

Because the term structure does not apply uniquely to the euromarkets, it is not intended to test the applicability of any term structure hypothesis to any particular market. Instead, the competing hypotheses will be set out and a short descriptive review of the literature covering the empirical studies to date will be made. It should be noted at the outset that there is still considerable conflict as to which hypothesis or combination of hypotheses have most explana-

tory power. There are also considerable differences of opinion as to the most appropriate methodology to be used and to the validity of the empirical results obtained.

There are four main hypotheses of the term structure of interest rates. They are:-

1) The pure expectations hypothesis
2) The expectations hypothesis augmented by a liquidity premium
3) The hedging or market segmentation hypothesis
4) The preferred habitat hypothesis

Each hypothesis will now be set out individually.

The Pure Expectations Hypothesis

This theory suggests that investors hold confident expectations of future interest rates. Long rates are modified geometric averages of current and expected future short rates. Thus, if investors expect short rates to rise in the future, long rates will be above short rates. The investor has three alternatives; one is to invest in an instrument with a maturity equal to his anticipated holding period. Secondly, he may invest in a shorter term security and reinvest the proceeds. Thirdly, he may invest in a longer term security, sell at the end of the holding period and incur a capital gain or loss.

The pure expectations hypothesis postulates that the expected return to the investor will be the same for each alternative form of investment. If long rates were, say, below expected future short rates, investors would sell long securities, driving down their price and therefore raising their yield. They would also buy short securities, raising their price and driving down their yield. If there is a sufficiently large body of investors acting in accordance with their confidently held expectations, their expectations will be fulfilled.

Given the expected similarity of outcomes for investing in various

maturities, securities of differing maturities become perfect substitutes for one another. Therefore one ten year loan is similar to ten one year loans.

According to this hypothesis, a positively sloped yield curve implies that investors expect short term yields to rise in the future, while a negatively sloped yield curve implies that expected short rates will fall. This theory was first articulated by Fisher (1896). It was refined by Lutz (1940) and Hicks (1946).

The Liquidity Premium Hypothesis

This hypothesis differs from the pure expectations hypothesis in that it assumes that markets are dominated by risk averse investors. The risk to which they are assumed to be averse is loss of capital due to fluctuating secondary market values of investments with maturities longer than the anticipated holding period. The return on holding a one period bond for one period is certain, but holding a longer maturity bond for that period will be uncertain as to outcome due to uncertainty of secondary market value at the end of the holding period. This uncertainty stems directly from uncertainty regarding future interest rates.

Thus, while accepting that long rates are influenced by expectations of future short rates, investors require a premium above the geometric mean of expected future short rates to compensate for the risk of capital loss. Because changes in interest rates have a greater effect on the secondary market value of bonds the longer the maturity of those bonds, it is to be expected that the premium will be larger the longer the period to maturity. This theory was first put forward by Hicks (1946).

Extending Keynes' work on regressive expectations of bond holders in the speculative demand for money theory (Keynes 1936), it would be expected that the risk of adverse movements in secondary market prices

would depend upon the level of interest rates. If rates were low compared with historical experience (relative to the normal rate), investors would expect rates to rise, thus causing falls in secondary market prices. A larger risk premium would be required than when, say, interest rates were higher and not expected to rise much further. If rates were high by historical standards, they may be expected to fall, secondary market prices will be expected to rise and there may even be a negative risk premium.

Clearly then, at least on theoretical grounds, the liquidity premium could be expected to vary with the level of interest rates.

The Market Segmentation Hypothesis

This hypothesis also assumes that investors are risk averse and avoid risk by hedging, that is matching their assets with liabilities of equal maturity. Therefore, both lenders and borrowers have definite preferences for assets or liabilities of specific maturities. These preferences may be induced by institutional or regulatory constraints but the result is that each maturity can be treated as a separate market. The yield on securities of any particular maturity is dependent upon the separate supply and demand functions for those particular securities. The desire to avoid risk, together with institutional or regulatory constraints precludes borrowers and lenders shifting from one maturity habitat to another unless, presumably, the differentials (benefits) from so doing are extremely large. Thus, a premium has to be paid to induce an investor to change habitat but this premium does not have to be only at the long end.

This hypothesis assumes investors to be averse to two types of risk. Firstly, there is the risk of fluctuating secondary market values due to fluctuations in future interest rates, as covered by the Hicksian liquidity premium model. However, there is also income risk. This is where there is a risk of loss of income due to interest rates falling

during the holding period of, say, a liability which is used to fund an asset of shorter maturity. Upon reinvestment of the asset's sales proceeds a lower rate of interest will be earned. This may fall below the rate payable on the liability, and thus a loss ensues. Financial intermediaries are clearly open to this risk.

It has been suggested that the wish to avoid these risks is so great as to preclude the influence of expectations on the term structure (Culbertson 1957).

However, Meiselman (1961) has pointed out that, even if institutional preferences are very strong, there are many parts of the term structure which are overlapped by different types of institutions, thereby providing continuity in the yield curve.

Further, provided that there are sufficient "floating investors" which are free to move between maturities, expectations will influence the term structure.

The Preferred Habitat Hypothesis

This hypothesis, which was originally suggested by Modigliani and Sutch (1966), is an amalgam of the previous three theories. It accepts the basic idea that the term structure is influenced by expectations augmented by a risk premium of the Hicksian type However, they note that the Hicksian liquidity premium assumes that all investors wish to convert their portfolio into cash at the end of the short period, ie that the investor has a short habitat (p183).

To overcome this weakness, they draw upon the segmentation model and suggest that different transactors will prefer different habitats. The preference for habitats is because investors are assumed to be averse to the risks of loss of income and loss of capital as discussed above. That being so, Modigliani and Sutch note that the combined influence of the compensation for the two risks could result in either positive or negative "risk premiums" depending on the supply and demand

for securities in each habitat.

The role of arbitrage and speculation as well as transactions costs is also recognised in this model. As differences between supply and demand in each habitat change the relative yield in each habitat, speculators may be encouraged to take the risk of moving out of their preferred habitat. Also arbitragers, by borrowing in one habitat and lending in another, will encourage equality of yields between habitats. Lastly the transactions costs are less if investments are repaid at the end of the desired holding period than if securities have to be sold during or at the end of that period.

Thus, this theory postulates that the term structure of interest rates will differ from that suggested by the pure expectations theory by the amount of discount or premium caused by the interaction of supply and demand in each preferred habitat. However, the size of this discount or premium will be mitigated by speculative and arbitrage activity between habitats and comparative transactions costs.

Empirical Investigation of the Term Structure

For a body of literature dating back to at least 1896, eg Fisher op cit, the empirical studies of the term structure of interest rates must be noted for the continuing if not increasing controversy regarding the factors that determine the term structure.

Prior to the work of Meiselman (1961) there had been two approaches to the testing of the expectations theory. One method characterised by Woodward, cited in Hickman (1943), used questionnaires directed at market experts to determine their expectations of future short rates and compared these expectations with the current yield curve.

An alternative approach was to use the perfect foresight method. Macaulay (1938) used this technique in which he substitutes the actually prevailing rate in period t + n for the expected short rate in t applicable n periods later. If the long rate is a geometric mean of the

current and correctly expected future short rates, then the expectations hypothesis is substantiated.

However, Macaulay concluded that the results of his study did not support the expectations hypothesis. Later work by Hickman (1943) and Culbertson (1957) supported Macaulay's results.

These studies suffered one common weakness. That was that they provided no rigorous theory of how expectations were formed. Meiselman, op cit, rectifies this weakness by postulating that expectations are formed by continuously changing current expectations in the light of the forecasting error of previous expectations - an error learning model.

Meiselman interpreted his econometric results as supporting the expectations model augmented by an error learning model. However, the explanatory power of this model declines as maturity increases. Thus, investors have more confident expectations of the near future than the more distant future, and therefore near future expectations are acted upon more definitely than more distant ones. As more distant expectations are held with less confidence, they have a lower weighting in the error learning process and this is consistent with the long rates being a geometric mean of expected short rates.

Meiselman also spends considerable time testing the Hicksian liquidity premium model and market segmentation hypothesis.

A distinction is made between the risk indifferent pure expectations model on the basis of the constant term. A positive constant term implies a liquidity premium. However, Meiselman found the constant term to be equal to zero and thus he rejects the Hicksian liquidity premium model. Wood (1963), on the other hand, shows that a zero constant is compatible with the existence of liquidity premia "..... A constant term equal to zero, although necessary to the expectations hypothesis under Meiselman's assumptions, is also consistent with the liquidity premium theory under the same assumptions", (p166).

Meiselman tests for the market segmentation model by investigating the influence upon the term structure of changes in the maturity structure of outstanding debt. He found little association between these two variables and therefore refutes the market segmentation hypothesis.

Wood (op cit) has criticised these tests on the basis that the supply and demand for securities of different maturities will be dependent upon, among other things, the relationship between relative prices and therefore yields.

Meiselman's work has also been criticised because of the nature of the data used. The data was in fact hand fitted yield curves derived from Durand (1942 and 1958). Grant (1964) criticised Meiselman's results, contending that the Durand data was constructed in such a manner as to favour Meiselman's results. Buse (1967) reinforces this point by showing that similar results can be obtained by using the data in reversed, or random, order. 1965 saw a paper by Van Horne supporting Meiselman's results, but this in turn was criticised by Santomero (1975) for having the same sort of data weaknesses as Meiselman's original work.

Santomero, op cit, overcame the data weaknesses suggested above by using the yield curve associated with eurocurrency deposits. The advantages of this type of data are their homogeneity, their continuity, and the absence of the need to interpolate for missing data sets. Furthermore, this study is applying an error learning model in a relatively new market. It was considered that his results supported Meiselman's hypothesis.

Santomero also tested for the existence of liquidity premiums following the methodology of Cagan (1969). According to Cagan, if the pure expectations hypothesis holds, the return on a one period issue should equal the return on holding a longer maturity issue and selling at the end of one period at the market price. The difference between the one period realised return on longer maturities and the explicit one

period return on one period securities indicates the size of the liquidity premium associated with longer maturities.

To test for liquidity premiums in this way in the eurocurrency deposit market for non negotiable deposits is invalid. The Hicksian liquidity premium assumes that investors are averse to the risk of loss of capital due to fluctuating secondary market prices due to unanticipated fluctuations in future interest rates. In the eurocurrency market for non negotiable deposits, such a risk does not occur because the deposit is always repaid at par. There may in fact be an income risk as premature withdrawal may result in forfeiture of accrued interest. It should be noted that Santomero's results would only be valid provided the data related exclusively to marketable negotiable certificates of deposit which can be subject to fluctuations in secondary market prices.

Santomero considers that his results support the expectations hypothesis, albeit with risk premiums, but that the coefficients of determination are smaller than in previous studies. He suggests that fluctuations in exchange rates may be one reason for this.

In fact, one should go much further. The eurocurrency deposit for most holders is a foreign currency asset (81% according to Johnston 1982). Thus, the expected yield on a foreign currency investment must either include the cost of avoiding exchange risk, ie forward market hedging, or it must take into account both expectations of future interest rates and expectations of future exchange rates. Thus, the term structure of yields on eurocurrency deposits should take account of the term structure of exchange rate expectations as developed by Porter (1971), and of the term structure of the costs of forward cover, this latter because transactions costs change with maturity in the forward exchange market.

At the same time as the work of Santomero was published, Cargil (1975) published the results of his study into the pure expectations theory within the context of an efficient markets model. He concluded

that the results reject the expectations hypothesis - at least for the British bond market. However, it should be noted that he used data supplied by Grant (1964) and Fisher (1966) and that these two studies disagreed between themselves in their support for Meiselman's results.

Turning now to the studies of the preferred habitat hypothesis, Modigliani and Sutch developed their theory in order to evaluate the US financial policy introduced in 1961 known as Operation Twist whereby the government tried to reduce long rates by selling long maturities and raising short rates. The high short rates were aimed at attracting short term international capital while low long rates were aimed at encouraging domestic investment. The results of this study which are relevant to the analysis of the term structure are that expectations have an important influence but that neither the maturity structure nor changes in that structure exert a significant lasting or transient influence on the relation between the long and the short rates.

Modigliani and Sutch also consider that long rates involve a blending of one, extrapolated expectations of very recent changes in short rates, and two, regressive expectations towards a long term normal rate. This follows a combination of the work by Duesenberry (1958) and de Leeuw in Duesenberry et al (1965). The Alman lag structure constrained to sixteen quarters was also considered significant in their results. The significance of this lag structure was criticised by Hamburger (1971) and in fact modified by Modigliani and Sutch in their 1969 paper.

Karakitsos (1977) considers that "..... the results for both the US and UK indicate that no one has yet succeeded in developing a reliable statistical model relating past interest rates to expected future rates", (p141). He then proceeds to develop a model confirming the interaction of regressive and extrapolatory expectations. He notes that the peak impact of expectations in the UK market is four months and thereafter regresses rapidly to the long run historical expectation in

something less than three months (p149).

His study therefore supports the preferred habitat hypothesis and the role of expectations.

During the late 1960's a body of literature developed which ran counter to that emphasising the role of expectations in determining the term structure. This literature postulated that capital markets were efficient and that interest rates follow a random walk. That is that movements of interest rates in a current period are independent of movements in previous periods (Granger & Rees 1968, Roll 1970, Bierwag & Grove 1971, Pippenger 1974). If it is true that interest rates follow this random walk, long rates will not be dependent upon a distributed lag of expected short rate as suggested by Modigliani and Sutch, op cit, and other literature cited above.

Phillips and Pippenger (1976) develop a simplified efficient markets model to compare with the preferred habitat hypothesis. They found that the long rate was equally well explained in their model by the long rate lagged one quarter and the current change in the short rate. This supports the notion of market efficiency and contradicts the distributed lag model of the influence of expectations. They also suggest that the shape of the lag structure found by Modigliani and Sutch results from using a low degree Alman polynomial rather than the result of extrapolative and regressive expectations (p17).

A paper by Fildes & Fitzgerald (1980) develops a model of expectations formation and liquidity premium with which to test the efficiency of the London Interbank market. The model for the liquidity premium follows the arguments of Hamburger & Platt (1975), Nelson (1972), and Kessel (1965). They conclude that their results give strong support for the suggestion that rates follow a random walk in this market.

The paper by Kessel relates to liquidity premia of the Hicksian type ie due to risk of capital loss when selling a long bond due to fluctuations in interest rates (chapter 3). However, such a premium is

not relevant to securities where there is no fluctuation in capital value due to fluctuation in interest rates as is the case with bank deposits. In fact, this is similar to the criticism made of the paper by Santomero (op cit).

It is interesting to note that a premium on long, compared with short, yields is often found in a variety of securities, some having the Hicksian risk and others, such as bank deposits, which cannot have such a risk. The simultaneous existence of a premium in securities with and without such a risk must throw into doubt the concept of the Hicksian risk premium.

This is not to deny the existence of a premium, for it clearly exists whenever the yield curve is positively sloped. However, the size of any premium should not be explained only by the risk of capital loss. Income loss is also important but only applies to maturities shorter than the desired holding period. The lack of income risk on longer maturities will reduce the overall risk associated with holding long dated securities. If we treat the influence of a certain income on longer maturities as analogous to a risk discount, it must be working to reduce the observed risk premium. Therefore, the true 'risk' premium considered in previous studies to be of the Hicksian form must in any case be larger than that observed in the market.

Of course, some of the premium observed with bank deposits may represent credit risk because the majority of these institutions are private and therefore exhibit greater default risk than government institutions. However, the premium observed by Fildes and Fitzgerald (op cit) can only somewhat implausibly be explained by credit risk seeing that they were investigating the very short end of the interbank market.

There may be an income risk from investing in long term bank deposits which is analogous to the Hicksian risk. That is that if interest rates rise before the repayment of the deposit, and the depositor has to borrow, he may have to pay a rate of interest on his

borrowing that is greater than he is earning on the deposit he owns. This risk of incurring additional interest costs given uncertainty over future rates of interest and expenditure flows must be compensated for with a risk premium.

A further influence over the observed premium on long rates may be the possibility of arbitrage between bank deposits and capital market securities. This is particularly pertinent to the eurocurrency deposit rates where arbitrage between eurobonds and eurocurrency deposits is frequent. Further, eurobond portfolios are often financed by eurocurrency deposits. Thus, the costs which the market makers are willing to incur in attracting deposits will be influenced by the return on the eurobond portfolio. This portfolio will consist of, inter alia, long term bonds which pay a Hicksian liquidity premium.

Transactions costs will have an influence upon the term structure if these costs differ between maturity. These costs can be divided into brokerage type costs including any stamp taxes on one hand and the spread between bid and offer prices on the other. The influence of brokerage type expenses will depend upon their relation to maturity and the distribution of holding periods relative to the distribution of maturities. If brokerage costs rise with maturity and holding periods are shorter than maturities, a yield premium will be required to compensate for the higher costs incurred.

Where the bid and offer spread widens with maturity, the costs to investors rise and therefore a premium to cover these costs will have to rise with maturity.

One reason for bid-offer spreads widening in the bond market as maturity increases is the greater fluctuation in the value of the market makers' portfolio following interest rate fluctuations. However, as is explained in the section on marketability, maturity, at least in the eurobond market, does not seem to influence the bid-offer spread. Furthermore, generally eurobond transactions between market makers do

not attract brokerage costs.

It seems, therefore, that transactions costs can have little influence over the term structure of eurobond yields and such costs are very low in the interbank market.

In a recent article Schaefer (1981) shows that because individual bond issues have different degrees of tax efficiency, it is not valid to talk of a term structure common to all, say, default free bonds. The term structure becomes specific to each of the separate tax efficient groups.

This question of tax specificity of the term structure is important because of the international nature of the eurobond market. With investors in many markets but the bonds issued in an international market, the tax laws of the investors' residences will have the dominant influence. Given the variety of tax laws around the world, the tax specificity of the term structure becomes a very variable concept.

Discussion of the term structure so far has ignored expectations of future exchange rates. Porter (1971) developed a framework for analysing the term structure of exchange rate expectations. Froewiss (1977) shows that in a risk averse world, differences in interest rates on term structures of securities in different currencies are a combination of interest rate risk and exchange risk premia. Beenstock and Longbottom (1981) develop a model that shows the influence of a world term structure upon a domestic term structure given expectations of future exchange rates. It seems obvious that where investors are able to choose between investments in different currencies and maturities, the choice will be influenced not only by the compensation available to cover interest rate risk but also by the compensation for exchange rate risk. Thus, if the term structure is influenced by expectations then expectations of future interest rate and exchange rate changes will influence the domestic and world term structures. However, if the market segmentation hypothesis holds, then investors may have preferred

habitats not only as to maturities but also as to currencies. If this latter case holds, the influence of the world term structure upon the domestic term structure will be reduced (Beenstock & Longbottom, p47).

There is plenty of evidence of periodic shifts in demand for eurobonds denominated in certain currencies as investors develop expectations of those currencies weakening. However, there is less evidence of banks shifting their tastes in loans due, no doubt, to their intermediating function and balancing their currency exposure. There is therefore prima facie evidence that eurobond investors do have preferred habitats with respect to the currency of their investments. However, the currency habitat may be influenced by expectations of exchange rate movements as suggested by Kern (1973) as well as institutional factors.

It is clear from this brief review of the literature that there is far from unanimous opinion as to the determinants of the term structure of interest rates. There may be some question as to the validity of extrapolating the results of the various studies discussed to markets other than those tested. The reason for this view is that not only may there be preferred habitats as to maturities but also as to currencies and types of instruments. This could be particularly important when one takes into account the tax specific term structure suggested by Schaefer, above, and also the influence of expected future exchange rate changes upon the preferences of investors and borrowers.

The term structure literature can be more easily identified as applicable to the eurobond market than the euroloan market. Its applicability to this latter market is further reduced when it is realised that the roll-over dates of syndicated loans are, in the majority of cases, either three months or six months. Thus, although a yield curve will exist in the interbank market, the borrower will, by convention, be limited to two points along that curve and, at times depending upon the competitive environment, may not enjoy even that choice.

We now proceed to analyse those factors that influence the yield on syndicated loans, specifically the spread or the margin.

4.3 Factors Influencing Interest Costs Specific to Eurocurrency Loans

As floating rate syndicated loans account for the majority of eurocurrency loans to LDCs this section concentrates on the pricing of those loans.

The total interest rate will consist of a reference rate, typically LIBOR, and a spread or margin added to the reference rate. This spread and any additional front end fees which the bank may receive constitute the yield on the syndicated loan. It is the determination of this yield and particularly the spread element that is the subject of this section.

OECD figures show that from 1975 to 1983 average spreads on loans to LDCs fell to 0.87% in the second quarter of 1979 and rose to 2.02% in the first quarter of 1983 (Financial Market Trends, various issues). Clearly such fluctuations, which only influence new loans, can have a considerable influence on borrowers' debt servicing costs and the yield which the banks receive on their loan portfolios.

The yield represents the price at which the bank is willing to supply a loan to the borrower. The planned yield will depend upon the bank's pricing policy; the actual yield will depend upon the extent to which competitive market forces cause the bank to deviate from its plan.

Although the yield may be analogous to the supply price of syndicated loans, because the cost of funds to the bank is passed to the borrower within the terms of the loan agreement, it is not analogous to the demand price. The demand price, or cost to the borrower, consists of the total cost of the borrowed funds. The two major components of these costs are the yield and the money market rate, usually LIBOR, to which the yield is added.

Immediately, we can notice a methodological problem in developing supply and demand functions for these loans. Supply will be a function of yield, among other things, while demand will be dependent upon total cost. One answer to this problem may be to assume that, due to the

arbitrage activities in the wholesale money markets, all forms of credit that are substitutes for eurocurrency loans will have similar basic interest rates. Therefore the price influences upon demand are limited to the mark-up above the reference rate. We also need to assume that credit on preferential terms from such bodies as the IMF and World Bank is not a close substitute for eurocurrency syndicated loans. Given the conditionality associated with official preferential credit these two assumptions are not too unrealistic and are made in the following analysis.

This section develops a simultaneous equation model to isolate those factors that influence yield on syndicated loans where that yield is assumed to result from the interaction of the supply and demand for that type of loan.

4.3.1 Specification of the Yield Variable

Of the work carried out into the determinants of the yield or supply of syndicated loans, generally the yield has been specified as the spread or margin above the reference rate of interest (Feder & Just 1977, Kapur 1977, Sargen 1976). These studies mis-specify the yield variable by ignoring the incidence of fees. It may further be argued that the yield is mis-specified because it is not adjusted for differences in size of loan, maturity, grace periods and the tax spare elements of some loans.

Fees are important in determining the yield which the lending banker gets for a particular risk. With regard to eurocurrency syndicated loans, fees are of four types: a) the commitment fee, b) the management fee, c) the participation fee and d) the agency fee.

These fees are difficult to take account of in this study for several reasons. Firstly, the data on fees are irregularly published and when published the details are inconsistent between loans. The managers of banks' syndication departments consider that the fees are to be kept

strictly confidential. One reason for this is that fees are often manipulated in relation to the published spread in order to achieve a confidential yield to the lender. Borrowers are often willing to pay higher than normal confidential fees in order to achieve a lower publicised spread (ref Financial Times 15.4.81, p25). This lower spread will be interpreted by some as indicating that lenders perceive the borrower as a lower credit risk than is actually the case. This would obviously be beneficial to the borrower should further funds be required from the market.

The second problem is that it is difficult, again due to lack of information, to determine the actual amount paid in fees to each member of the syndicate and therefore to what extent the yield required by each lender is made up of spread or fees. Each type of fee exhibits different difficulties in this respect.

The Commitment Fee: This is charged for the duration of the period of drawdown ie from the date of the signing of the loan agreement to the date when the borrower takes the funds. Data are not available on the ex post duration of the drawdown period. Further, data on the maximum permitted period of drawdown are published only occasionally. Accordingly it is not possible here to determine the amount payable in such fees.

The Management Fee: This fee is divided amongst the managers and sometimes co-managers pro rata to their contribution of funds. As it is an agreed percentage of the total loan the amount of this fee is known when details are published. However, not all members of the syndicate will enjoy this form of fee income because they will not all be classified as managers. Further, data are not always available for this type of fee although provision in invariably made for it in the loan agreement. Therefore to include the data for some loans and not for others will introduce bias into the data.

The Participation Fee: This fee is paid to each bank participating in the syndicate in proportion to the contribution made by each bank to

the loan. However, it is usual for the proportion paid in fee to be higher the larger the amount lent by any individual bank. Usually several sizes of participation are allowed for say $1-3 million, $4-5 million, $5+ million, being associated with several fee sizes, say three-eighths per cent, half per cent and five-eighths per cent respectively. Therefore the influence of the participation fee upon the yield depends upon the size of the individual participations. Because data are not available relating to the size of these participations, it is not possible to determine how this fee influences the yield to each individual lender.

The Agency Fee: This is paid to the agent bank at regular intervals during the life of the loan. The agent bank carries out a number of clerical and administrative functions during the life of the loan. This study, therefore, assumes that the agency fee only compensates the agent bank for these extra duties and does not contribute to the yield on the loan.

Due to the inadequate provision of data relating to fees it is felt that it is not possible to include fees to give the correct specification of the yield variable and unfortunately published data on spreads must be used as a proxy for the yield.

It must be remembered that the impact of front ended fees upon annual yield will be reduced the longer the maturity of the loan. To this extent the ability of bankers to manipulate yields is limited. Further, Ellis (1979) has shown that fees and spread are positively correlated over time. However, he did not carry out a cross section study of the relationship between fees and spreads. Anecdotal evidence collected by the current writer suggests that fees and spreads are negatively correlated on some loans. Therefore the published level of spreads in any one time period would be influenced by the number of borrowers that trade off fees for spreads and this number may not be stable from one time period to the next.

A further variable that influences the yield to the lender and cost

to the borrower is the grace period covering repayment of principal, or of principal and interest. Grace periods will reduce the effective cost to the borrower if the funds that would have been used for paying the principal or interest can be reinvested at a positive rate of return. It follows that grace periods reduce the effective yield to the lender if the foregone payments could have been reinvested at a rate of return different to that of the original loan.

It is not possible to determine the influence that grace periods have on effective yield or effective cost because the effect depends upon the opportunity cost of funds during the period of grace. Suitable data on the opportunity cost of funds is not currently available and is unlikely to be in the future. One reason for this is that a knowledge of such opportunity costs requires a knowledge of the subjective judgements of yields on alternative uses of funds.

Accordingly grace periods have not been taken account of in the specification of the yield variable.

Maturity of the loan will also influence the bankers' perceived risk and therefore the spread should be adjusted to take account of the different maturities. A problem arises in deciding the weighting to be given to the maturity. Johnston (1983) found no systematic relationship between spreads and maturities on a cross section basis. It is therefore not possible to arrive at a trade off between those variables that has any rigorous basis. The reason for Johnston's findings may be that the spread is an individually negotiated element of the yield and will therefore be influenced by the relative negotiating strengths of the partners. As such it may be an inefficient indicator of risk, particularly in the light of the discussion of fees above. Accordingly this study does not weight the spread by the maturity of the loan and therefore uses, extremely reluctantly, the published spread as a proxy for the yield to the lending banker and the cost above LIBOR to the borrower.

4.3.2 The Supply Price

Following the analysis of the bank lending function in chapter three, this section postulates that bank management have a utility function where market share and profitability enter positively and risk enters negatively.

Formally the utility function is given as:

$$u = f(\pi, R, M)$$

where π = profit

R = risk

M = market share

and $\frac{\partial u}{\partial \pi} > 0$ thus profits enter the utility function positively

$\frac{\partial u}{\partial R} < 0$ risk detracts from utility

$\frac{\partial u}{\partial M} > 0$ market share positively influences utility

The bank management is assumed to manipulate the following syndicated loan variables $\mu r, \sigma^2 E(r), m$, in order to maximise the above utility function subject to the constraints $\pi > \pi min$, $R < R max$

where μr = the average expected yield on the syndicated loan portfolio

$\sigma^2 E(r)$ = the variance of the expected yield on the loan portfolio

m = share of the syndicated loans market measured either by the number of loan mandates won or by relative size of loan portfolio. This distinction is important because some banks aim to be lead managers of loans and then sell down their commitment under the mandate thus earning only fees; other banks aim to build up loan portfolios and earn interest as well as fees.

We have thus extended the utility function found in Tobin (1958) where profit is represented by the mean of the expected return on assets and risk is represented by the variance of the expected rate of return on the assets. However, there is anecdotal evidence to suggest that profit maximisation, an assumption made by Tobin (1958) and Markowitz (1959), may not be an appropriate assumption for a model describing the behaviour of a modern international bank. In particular the banks are concerned

about market share and size of loan portfolio, Davis (1976, p32), Euromoney (February 1978, p21) and chapter seven page 337 of this thesis.

Because modern banking uses sophisticated marketing techniques and allocates resources to the marketing function, market share must feature prominently in the bank's utility function. This view is supported by the analysis in chapter three above and by evidence that large banks are keen to become lead managers of syndicated loans in order to enjoy the attendant fees but then sell down as much of the loan as possible, thus not taking upon its books any of the risk. To some extent such behaviour is circular in that a bank can only be sure of winning mandates to manage syndicates when it is known to be prominent in the market. Thus market share is an important prerequisite for this type of behaviour.

There is also evidence that the banks engage in loss leader marketing policies on loan pricing in order to get themselves established in the international market (Economist March 31 1979).

During 1979 there was considerable anecdotal evidence in such journals as Euromoney that the low spreads of that period were below the marginal cost of financial intermediation. However, it is not possible to determine whether or not the comments were aimed at trying to 'talk up' the level of spreads at the time. Further, no mention was made of the role of fees in the marginal revenue. We should also question the measurement of marginal cost in eurobanking.

The analysis in chapter three shows that the marginal cost of eurobank lending could be very low if not zero. Given the considerable indivisibilities in the fixed capital of a modern bank, particularly computers, modern offices and communication systems, the marginal cost of supplying syndicated loans may be below average cost. Thus the statement by banks that spreads are not sufficient to cover the costs of intermediation (Maynard & Davies 1980) could mean that marginal revenue is below marginal cost because the desire for a larger market share is strong in the utility function. Alternatively, it could mean that the

banks consider their marginal revenue to be below average cost. This does not mean that the banks will be making losses; because marginal revenue could still be above the very low marginal cost suggested in chapter three, page 124 .

The model of eurobank lending developed in chapter three suggests that banks will lend provided they have the resources to do so or can acquire those resources without unduly reducing profits, and also that the risk reward ratio is acceptable. With regard to risk, the traditional models of portfolio behaviour following Markowitz (1959) and Tobin (1958) and discussed in detail in chapter five of this thesis, show that where the rates of return on alternative investments are less than perfectly correlated, the default risk can be reduced by diversifying the asset portfolio. Further, Grubel (1968) has shown that there are welfare gains from portfolio diversification as the total size of the portfolio gets larger.

Accordingly, the diversification of the bank's lending portfolio into syndicated loans may be seen as a policy aimed at reducing the risk element in the utility function of the banking system. This view is strengthened when it is realised that one advantage of the syndicated loan system is that lenders need only take small participations in the loan, thus achieving greater diversification of a given portfolio size. Moreover, the floating rate nature of syndicated loans reduces the funding risks that the banks would face with flat rate loans.

However, it must be remembered that only the unsystematic element of risk can be diversified away and all loans will be subject to substantial systematic risk (refer page 242 below).

The reward required will be related to risk in eurobank lending and the rewards for similar degrees of risk bearing in alternative lending markets. It is shown below, page 224 , that syndicated loans to LDCs attract higher spreads than loans to OECD borrowers. Thus the move into syndicated lending to LDCs during the 1970's can also be seen as

enhancing the profit element of the banks' utility functions.

From the above discussion it is possible to postulate an equation for the supply price as follows:

$$Spd = f(L\ P\ R\ Q)$$

where Spd = Spread

L = Loanable funds available. This variable is proxied by the level of deposits in the euromarkets and represents the resources required by the banks in their lending process.

P = The profitability of euroloans relative to alternative lending opportunities

R = Risk

Q = Quantity

In order to test this proposition it is necessary to specify the data sets which represent the variables included in the above function. This empirical work was concentrated on the eurodollar loans because they are by far the most important group.

The Spread

The spread data was obtained from eurodollar syndicated loans of five countries: Brazil, Indonesia, Republic of Korea, Mexico and the Philippines. Between them these countries account for over 47 per cent of the loans outstanding to financial markets in both 1974 and 1980 (calculated from IBRD 1983).

Supply of Loanable Funds

Banks take deposits from the interbank markets or from non bank customers. In the interbank market the bank will offer and bid for deposits in order to develop a two way business and to maintain its image in the market. Nevertheless, there will be an emphasis on borrowing or lending to this market as the bank adjusts its need for

liquid funds at the margin. Rates of interest paid and received on deposits of this nature fluctuate in accordance with the marginal adjustments of the banking system as a whole and these fluctuations are volatile.

In contrast, the banks' behaviour in relation to non bank customers is that they do not turn deposits away. Whether these are time deposits or demand deposits, they are accepted by the banks, although the rate of interest paid will be adjusted so as to equate supply with demand. As a result, if liquidity increases in the financial system, then it must end up with the banks or other financial intermediaries.

The only constraint upon the banks in attracting deposits is that the funds must be employed profitably. The greater the liquidity of the banking system, the greater will be the competition within that system to diversify the asset portfolio. It is clear then that the willingness of the banks to diversify into international lending will not be constant over time. The relative demand for bank liabilities, ie supply of funds to the banks, will influence the need for the banks to diversify. The demand for bank loans will be important because it will influence the amount of diversification that the banks find possible and the yield that is attainable upon such diversification.

Competition in the diversification process will be particularly important in that it will also influence the yields which the banks can get on their portfolios. The greater the competition, the lower will be the yield that the banks will have to accept for a given degree of risk.

It is therefore considered that the willingness of the banking system to provide eurocurrency syndicated loans is positively influenced by its liquidity. The yield which the banks require on these loans will be influenced by the degree of competition in this market, this competition being positively related to liquidity. It is therefore postulated that yields will be negatively related to the liquidity of the banking system, in particular to the flows of funds to the eurocurrency market.

Taking the eurodollar market as an example, three main factors are seen to influence this flow of eurocurrency deposits. Firstly, there is the US balance of payments disequilibrium. Secondly, there are the balance of payments surpluses of the oil exporting countries. Thirdly, there is the interest differential in favour of eurodollar deposits against domestic deposits.

There has been considerable debate as to the influence of the US balance of payments deficits upon the supply of eurodollar deposits, eg Friedman (1969) and Klopstock (1970). Friedman suggests that a US deficit is not a sufficient condition for growth of the eurodollar market. He agrees that a deficit will give foreign holders a supply of dollars but it does not ensure that they continue to hold those dollars. If the dollar ceases to be attractive, holders can sell dollar denominated assets and buy assets denominated in other currencies. However, we must remember that the US dollar is the major unit of account in international trade and will therefore be held for transactions purposes. Furthermore, the higher interest rates available on eurodeposits make these deposits more attractive than domestic dollar deposits to those investors who are otherwise indifferent between the two types of investment.

Given the transactions demand for eurodeposits, it is considered that US balance of payments deficits will influence the supply of eurodollar deposits. The effect of the interest rate premium which eurodeposits have over domestic deposits is discussed below.

The influence of the oil exporting countries' balance of payments surpluses on euromarket liquidity stems directly from the US dollar being used for transactions purposes in the international oil trade and the willingness of the oil exporters to hold their reserves in the eurodollar market. This propensity to hold reserves in the form of eurodollar deposits was influenced by the transactions and investment demand for dollars. The depth of the eurodollar market and variety of instruments available to investors are also influential.

To the extent that oil exporting countries do not transform their net oil revenues into other currencies but simply hold them as eurodollars there will be no flow of funds out of the US banking system but simply a change of ownership of the deposits held within the USA.

It must not be thought that the US deficit and the oil exporters' surpluses cancel each other out. The US deficit will cause a flow of dollars to non oil exporting countries, some of these dollars being held in the euromarkets.

It has already been noted that there must be some incentive for the owner of dollars to hold them in the eurodollar market rather than in the domestic market. The most easily measured incentive is the interest differential between domestic dollar deposits and eurodollar deposits. The reasons for the differential have been discussed on page 141 above. Changes in the differential between these two rates will, ceteris paribus, cause arbitrage flows between the two markets. Therefore flows of funds into the euromarkets will be positively related to the interest differential.

As the spread on syndicated loans is hypothesised to be negatively related to euromarket liquidity, it is expected that the spread will be negatively related to each of the three influences upon liquidity discussed above.

The Profitability of Alternative Lending Opportunities

Although increased liquidity within the banking system will cause the banks to engage in competitive diversification of their portfolios, it does not follow that the diversification has to be directed into eurocurrency syndicated loans. Nevertheless there are several reasons for expecting such diversification to be directed at the loans market.

Firstly, although the banks may experience increased liquidity generally, the rate of change of liquidity in the separate constituent

currencies of the banks' portfolios may differ. Furthermore, as the banks experience increased liquidity in say US dollars they will prefer to diversify their portfolios by using the newly acquired funds to purchase US dollar denominated assets. One reason for this is that by avoiding any currency transformation the banks are avoiding currency risk. This is particularly so where the maturity transformation resulting from diversification causes the banks to seek hedging operations in thin markets eg seeking forward cover for more than one year hence.

Secondly, banks are skilled in the basic lending operations and therefore it is natural for them to seek to diversify their portfolios into assets that are as similar in nature as possible to existing assets, yet consistent with reducing unsystematic risk. This may be seen as an attempt to reduce the marginal administrative cost of diversification by avoiding the need to acquire completely new skills and preferring to build upon the skills which the banks already possess. The banks, having a better knowledge of loan markets than the markets for other services, reduce their costs (administrative and risk) by diversifying into a different type of loan.

Thirdly, there may be government controls limiting the type of non-loan assets into which the banks can diversify.

Fourthly, where the banks are subject to reserve asset requirements in their domestic banking operations, their holding of permissible non-loan assets may have reached saturation point.

Lastly, diversification by way of loans enables the banks to maintain their traditional marketing image in the market place. They continue to be perceived by existing as well as potential customers as lenders.

These five reasons for suggesting that banks will diversify into loans rather than non-loan types of assets do not in themselves explain why they diversify into eurocurrency syndicated loans to LDCs. Such an explanation must indicate why the banks did not diversify into domestic

lending in the same currency as their eurolending. One reason could be that the profitability of eurolending is greater than domestic lending.

When one type of lending becomes relatively more profitable than others, funds will be switched to the more profitable use. If it is assumed that banks wish to avoid exchange risk, they will deploy dollar funds in the domestic dollar or eurodollar markets depending upon which is the most profitable.

Two alternative measures of profitability were tested in the supply function. These were:

1) The difference between Prime Rate (adjusted for 15% compensating balances) and the rate on domestic CDs compared with the spread on euroloans to OECD based borrowers. Data for Prime Rate and the CD rate were extracted from World Financial Markets published by Morgan Guarantee Trust Co of New York. The data for spreads were extracted from Financial Market Trends published by OECD.

   This measure of profit relates to banks with a domestic US dollar deposit base having the choice of lending domestically or in the euromarkets.

2) The difference between Prime Rate (again adjusted for 15% compensating balances) and LIBOR compared with spreads to OECD borrowers. LIBOR was extracted from World Financial Markets. This measure of profit relates to banks using eurodollars to lend to US domestic borrowers or to borrowers via the euromarkets.

As prime rate is the rate at which US domestic banks lend to their best credit risks, the spread used as comparison is that of OECD based borrowers and not LDCs.

When the profitability of domestic loans rises relative to the spread on euroloans it is expected that bankers would lend to domestic

borrowers rather than euro borrowers. This would reduce the relative supply of loans in the euromarket, thus pushing up the spread. It is therefore to be expected that spreads are positively related to the difference between the profitability of domestic loans and spreads on euroloans.

Risk

The third element to influence the banks' diversification decisions will be the risk involved. Banks face two types of risk in this respect. The first type is associated with default of the investment; for syndicated loans this manifests itself in non payment of principal and/or interest. The second type of risk is associated with the degree of maturity transformation or currency transformation which the banks undertake in order to finance their syndicated lending. This risk would manifest itself in an inability of the banks to attract new funds or to roll over existing deposits in appropriate currencies at a cost that can be passed on to the borrower.

The risk of default by the borrower is considered here to be the greater risk because the risk of not being able to fund a loan on its roll-over date is allowed for in the loan agreement. In particular the loan agreement will state that if the lender cannot obtain the funds at an agreeable cost the loan does not have to be renewed. Nevertheless, having to refuse to roll over a loan because of inability to fund would seriously reduce a bank's ability to take part in future business. There is therefore some risk but this risk will be less important the more liquid is the banking system. The influence of liquidity upon the willingness to diversify has been discussed separately. It is therefore only necessary to include borrower default risk as the third influence on diversification. This is hypothesised to be positively related to the spread.

The banks use many variables in combination to derive some indication of the risk attached to a loan, therefore it is difficult to postulate the applicability of just one variable that represents risk.

The model was run with four alternative measures of risk. These were:

1) The ratio of interest payments to exports. This is based upon the argument in chapter six, page 272 below that receipts of interest have a higher ranking in the banks' utility function than amortization payments do.
2) The ratio of interest payments to reserves. The rationale for this ratio is similar to that in 1) above.
3) The ratio of total debt service to total export earnings. This ratio is included because of its frequent use by practising bankers.
4) The ratio of total debt service payments to GNP. Again this is included for the same reason as is 3) above.

The data for these measures of risk were extracted from the IBRD World Debt Tables 1982/83. The figures extracted were annual so quarterly data were derived by interpolation.

The supply price equation can now be set out formally as:

$$Spd = a_1 - a_2 USBP - a_2 Oil\ rev - a_3 (RE-RD) + a_4 R\pi + a_5 RISK$$

where: Spd = Spread

USBP = The autonomous balance of payments disequilibrium of the USA

Oil rev = Oil exporting countries' revenues

(RE-RD) = Interest rate differential in favour of eurodollar deposits

$R\pi$ = Relative profitability of euro to domestic lending

RISK = One of the four measures discussed above

Detailed definitions and sources of data are given on page 191 below.

4.3.3 The Demand Price

Demand theory suggests that the price of a good is, ceteris paribus, influenced by the quantity of that good demanded, the price of substitutes, income, wealth, and tastes.

The demand price for syndicated loans, ignoring fees, is the spread plus LIBOR. Thus the equation specifying price as a function of quantity and other variables can be formally set out as:

$$Spd + LIBOR = f(P_2, Y, W, T, Q)$$

where:
- Spd = Spread
- LIBOR = London Interbank Offer Rate
- P_2 = Price of substitutes
- Y = Income; in this case foreign exchange income represented by the autonomous balance of payments
- W = Wealth; particularly foreign exchange wealth, represented by the nation's stock of gold and foreign exchange reserves
- T = Tastes
- Q = Quantity demanded

However, as this section is aimed at determining the influences upon the spread it is therefore necessary to rearrange the function so that LIBOR appears on the right hand side of the equation, thus:

$$Spd = f(LIBOR, P_2, Y, W, T, Q)$$

LIBOR is expected, a priori, to be negatively related to spread because, being so much larger than the spread, it will have a much greater influence over the total cost of syndicated loans. As LIBOR rises the spread must fall in order to maintain the total price in relation to quantity demanded and the other variables in the demand function. Quantity demanded will be negatively related to the spread because spread is part of price.

Looking next at the financial flows that may be considered as substitutes for syndicated loans, aid flows, loans from the IMF and various development banks and eurobond finance might seem appropriate. However, chapter one above has shown how quantitatively inadequate aid flows from IMF and development bank funds have been during the 1970's. Chapter eight below shows that the eurobond market has never been an alternative source of finance for LDCs in the quantities required during the 1970's.

Foreign exchange reserves are substitutes for borrowed funds in that because of imperfections in financial markets, it is generally cheaper to use ones own funds than to borrow. There are exceptions to this rule, for example a minimum stock of reserves may be considered to be strategically necessary. Moreover, accumulating reserves may increase the country's credit rating in the financial markets.

Nevertheless, it is a reasonable generalisation that the larger the stock of foreign exchange reserves, the less will be the need to borrow in the eurocurrency markets, thus spreads are postulated to be negatively related to the level of foreign exchange reserves.

Wealth would generally be included in a demand function as a positive influence upon demand. However, highly liquid forms of wealth would not be considered a positive influence on the demand for credit where the expected rate of return on the liquid wealth is less than the expected cost of the credit. Therefore, although foreign exchange reserves may be considered as a proxy for the foreign currency wealth of the borrower, it is not appropriate to include them as a wealth variable in this model. It is also considered inappropriate to include any measure of physical wealth in this model due to the informational problems surrounding such a concept at the national level.

Turning now to the income factor in the demand function, we would expect the demand for a commodity to be greater the larger is the consumer's income. It is true that the developing countries with the

higher per capita incomes have tended to get the lion's share of international bank lending. However, this does not indicate the role of income in determining the cost of these loans.

Where the marginal propensity to import is positive, an increase in income will lead to an increase in the value of imports. Moreover, the increased import bill will manifest itself before increased exports due to the time lag between purchasing imports such as energy and capital goods on one hand and the sale of output on the other.

If we take the income variable in the demand function not as ex post income but some desired (ex ante) level of income appropriate to the government's welfare function, it is clear that an increase in this desired level of income will manifest itself in a deterioration of the current account of the balance of payments. The current account would have to be financed and one method would be by borrowing in the syndicated loan market. It is therefore felt that the current account of the balance of payments is a determinant of demand. The spread on syndicated loans is postulated to be positively related to the current account deficit.

The inclusion of tastes in the neoclassical demand function is particularly difficult to handle in the context of borrowing by developing countries. In particular, it is difficult to develop an explanation as to how the decision makers of developing countries develop their tastes. It could be considered that tastes for syndicated loans are influenced by the marketing efforts of the lending bankers and the terms and conditions attached to other forms of credit, as well as those factors influencing the need for credit. That being so, the factors underlying the marketing efforts are included in the supply function, while the other influences are accounted for in the demand function. It has therefore been decided not to include a variable for tastes in the equation to be tested.

The demand price equation can now be set out formally as:

$$Spd = b1 - b2\ LIBOR - b3FXRS + b4BOPS$$

where: Spd = Spread

LIBOR = London Interbank Offer Rate on 3 month loans

FXRS = The level of foreign exchange reserves held by LDCs

BOPS = The balance of payments deficits of LDCs

Qd = Quantity demanded

4.3.4 The Simultaneous Equation Model

Specifying the model in a simultaneous equation format, the structural equations are as follows:

$$SPDs = f(-\ USBP - OIL\ REV - (RE-RD) + RISK + REL\ \pi + Q)$$

$$SPDd = f(-\ LIBOR - FXRS + BOPS - Q)$$

$$SPDs = SPDd$$

From these, the following reduced form equations are derived:

$$SPDs = a1 - a2\ USBP - a3\ OIL\ REV - a4\ (RE-RD) + a5\ RISK + a6\ REL\ \pi - a7\ LIBOR - a8\ FXRS + a9\ BOPS$$

$$Q = b1 - b2\ USBP - b3\ OIL\ REV - b4(RE-RD) + b5\ RISK + b6\ REL\ \pi - b7\ LIBOR - b8\ FXRS + b9\ BOPS$$

These equations were solved for eight separate combinations of the two relative profit measures and four risk measures given on pages 181 and 183 above. The model itself is over-identified and therefore Two Stage Least Squares Regression is used to solve the structural equations. The Time Series Processor computer package was used for this purpose.

The initial runs to solve these equations using absolute values of data gave the following results:

The Supply Price

SPDs = C - USBP - OIL REV - (RE-RD) + RISK 2 + REL π2 + Q

2.85 - 0.018 + 0.007 + 0.056 - 0.048 - 0.199 - 0.0001

(3.1) (-2.89) (0.9) (0.4) (-0.69) (-2.3) (-3.8)

$\overline{R}^2$ 0.913

DW 2.10

The Demand Price

SPDd = C - LIBOR - FXRS + BOPS - Q

2.11 - 0.16 + 0.000002 - 0.0812 - 0.00006

(6.6) (-2.7) (0.20) (-1.72) (-1.69)

$\overline{R}^2$ 0.83

DW 2.1

These results were not acceptable because of certain variables being insignificant and having the wrong sign. It was thought that these results may have been influenced by multicolinearity between certain variables. Inspection of the correlation matrix of all the variables shows the following correlations between pairs of variables:

The Supply Price

Risk 2		Risk 2	
Rel π1	-0.78	Q	0.87

The Demand Price

	FXRS	BOPS
LIBOR	+0.93	-0.93
	BOPS	Q
FXRS	-0.86	0.85

Given the degree of multicolinearity between variables it was decided to use the first derivatives of LIBOR, Foreign Exchange Reserves, Balance of Payments, Quantity of Loans and all the profit and risk variables. The results are given below:

The Supply Price

$$SPDs = C - USBP - OIL\ REV - (RE-RD) + RISK2 + REL\pi 1 + Q$$

$$1.82 - 0.026 - 0.015 - 0.66 + 0.48 - 0.25 - 0.00008$$

$$(11.4)\ (-2.0)\ (-0.9)\ (-2.6)\ (+2.2)\ (-1.2)\ (-1.3)$$

R^2 0.72 $\bar{R}^2$ 0.59 DW 0.85

The Demand Price

$$SPDd = C - LIBOR - FXRS + BOPS - Q$$

$$1.38 - 0.13 - 0.92 - 0.39 + 0.97$$

$$(12.4)\ (-0.8)\ (-0.14)\ (-0.30)\ (+0.09)$$

R^2 -0.02 $\bar{R}^2$ -0.26 DW 0.33

The coefficients of the supply price show the importance of the US balance of payments, interest rate differentials and risk in determining the level of spreads. They also indicate that oil revenue, relative profit and quantity are not significant. Indeed, both relative profit measures discussed on page 181 proved to be negatively related to spreads. This would suggest some segmentation between the eurodollar and domestic dollar loan markets. In particular non US banks may not have free access to the US domestic loan market and regional US banks may not consider euroloans as close substitutes for loans to their domestic customers. Apart from quantity and relative profit all coefficients in this equation have the correct sign. As a further test on the profit variable the equations were re-run using the level of profit on domestic loans as the profit variable ie adjusted Prime Rate minus the CD rate or minus LIBOR. The results were inferior to the ones given above.

The risk 2 variable (ratio of debt interest to reserves) was the only one of the four risk variables to be positively related to spreads both in the tests using absolute data and in those using first derivatives. This result corroborates suggestions made in chapter six, page 272 of the importance bankers place on ability to service interest payments compared with amortization payments.

With respect to the demand price, the fact that the constant is the only significant variable is at first sight disappointing. However, the implication that demand factors are not important in the determination of spread is compatible with the suggested importance of bank marketing and the low marginal cost of loans suggested in chapter three of this thesis.

The poor explanatory power of the variables included in the demand function was similar for all eight combinations of equations incorporating first derivatives. Moreover, in the equation using absolute values of data only LIBOR had significant explanatory power.

The existence of first order autocorrelation in the results using first derivatives is disappointing but is a common problem where derivatives are used as data.

A test for first order autocorrelation as suggested by Theil and Nagar (1961) indicates the presence of autocorrelation in both functions. Checks of the data showed no evidence of nonlinearity and a data transformation suggested by Beach and Mackinnon (1978) failed to remove the autocorrelation. The problem is therefore thought to be due to the misspecification of the spread variable as suggested on page 169 above or the interpolation of annual data required to obtain quarterly data for the risk variables. Improved results will therefore have to await improved data.

Nevertheless these results emphasise the importance of the competitive supply of funds to the developing countries. This indicates that at periods when euromarket liquidity increases, the spreads on eurocurrency loans can be expected to fall.

Definitions of variables and sources of data used in model of spreads

SPREAD — The average spread weighted by quantity. Data up to end 1978 represents the spread paid by each of five countries: Brazil, Indonesia, Korea, Mexico and the Philippines and calculated from IBRD Borrowing in International Capital Markets. From 1979 the figures represent the spread paid by all LDCs as shown in table 9 of various issues of the same publication.

USBP — Sections A through D of IMF Balance of Payments Yearbook, various issues (not seasonally adjusted).

OIL REV — Taken from the Financial Review section of the Bank of England Quarterly Bulletin. In particular the table: 'Estimated Deployment of Oil Exporters Surpluses' including:

UK Sterling Deposits

Other Sterling Investments inc equities and property

Foreign Currency Deposits

US Bank Deposits

Other

Other countries

RE-RD — RE = Bid rate on 3 month deposits for prime bank in London. RD = 3 month negotiable CD issued by Morgan Guarantee Trust Company. Sources for RE and RD: Morgan Guarantee Trust Company of New York.

RELATIVE PROFIT — The relative profit measure number 1 as specified on page 181 above.

RISK — The ratio of interest payments to reserves as mentioned on page 183 above. The data source was the IBRD World Debt Tables annual data interpolated between annual points to achieve quarterly data.

LIBOR — London Interbank Offer Rate on US dollar loans. Source: calculated from Morgan Guarantee Trust World Financial Markets, various issues.

FXRS — Foreign exchange reserves of all non oil exporting LDCs. Source: IMF International Financial Statistics.

BOPS — Imports - Exports of all non oil exporting LDCs. Source: IMF International Financial Statistics.

Q — Quantity of syndicated loans to all LDCs. Source: IBRD Borrowing in International Capital Markets, various issues.

4.4 Factors Influencing the Rate of Interest specifically in the Eurobond Market

4.4.1 Introduction

There have been very few studies which aim to explain interest rates in the eurobond market. Park (1974) and Solnik and Grall (1975) develop models to explain "the yield" on eurobonds. Both of these works cover US corporate eurobonds during periods of fixed exchange rates and US capital controls. Finnerty, Schneeweis and Hedge (1980) cover the period of floating exchange rates but still cover US corporate eurobonds and investigate "the" eurobond yield.

The objectives of this section differ from previous work in that it does not treat eurobonds as a homogeneous group of instruments. It is intended to explain the reasons for the great variety of yields to be found in the eurobond market. It is also intended to isolate, where data will permit, the reasons for differences between yields on LDC eurobonds and the yields on eurobonds issued by other types of borrowers.

The cost of funds from the eurobond market, as with other financial markets, depends upon:

a) market conditions at the time of issue

b) the standing of the borrower, and

c) the terms and conditions of the instrument being issued

Subsumed within market conditions are the general level of interest rates, the currency structure and the term structure of interest rates. These have been discussed in section one of this chapter.

The standing of the borrower determines the risk structure of interest rates and, because of differing investment attitudes of banks and bond investors explained in chapter eight below, this risk structure will be different in the eurobond market compared with the eurocurrency loan market.

The terms and conditions of the instrument will include

marketability, callability and fiscal considerations. Marketability, or its lack of, is important in the analysis of LDC bond yields and is therefore discussed in this section. However, the relatively small amount of information about call provisions, sinking funds, etc precludes an analysis of these influences. Fiscal considerations are not considered to be important in this section because these will be common to all eurobonds and not just those issued by LDCs.

4.4.2 Definition of Yield

However, before proceeding to discuss the risk structure and terms and conditions of eurobonds, it is necessary to briefly review the concept of the yield as it pertains to eurobonds.

The yield to maturity

This is the rate which discounts all future receipts including repayment of principal at maturity such that the Net Present Value of the flow of receipts equals the current price of the bond. Yield to maturity is the relevant measure of yield where sinking funds do not operate.

The yield to average life

Some bonds allow for the maturity for some bondholders to be shortened by the use of sinking funds, purchase funds or call options. Where the terms for the retirement of bonds are known and compulsory, eg a sinking fund, it is possible to calculate the average life of the bond issue. The yield to average life discounts the flows due until average life and equates the resulting Net Present Value of those flows to the current price of the bond.

The determinants of the yield given are common to all financial liabilities, only the relative magnitude of each influence differs

between instruments issued. While this section has as its objective the determination of yields on eurobonds issued by developing countries, much of what is said is common to bonds and other liabilities issued by other types of borrowers. What does differentiate LDC bonds from those of other issuers is the risk structure of the yields and the marketability of the bonds. The yields are significantly higher and marketability considerably less than found on, say, bonds issued by OECD governments.

4.4.3 The Risk Structure of Interest Rates

It has already been noted that the yield on a financial asset compensates for various risks suffered with such an investment. This section is concerned only with the risk of default in payment of principal or interest. It may be caused by the insolvency of the borrower, including default by governmental borrowers as a result of a shortage of foreign exchange. However, default may also be due to a governmental borrower defaulting for ideological reasons, such as repudiating a previous administration's debt commitments.

In the case of syndicated loans, the reward for bearing such risk was subsumed in the fees-spread combination agreed in the loan agreement. However, in the case of eurobond issues, this reward will be subsumed in the overall yield, with higher risk bonds showing higher yields, ie a risk premium.

There is very little literature related to the determination of default risk premia in the bond markets. Examples that do exist eg Fisher (1959), Johnson (1967) and Merton (1974) relate to corporate bonds. The present writer knows of no literature specifically relating to risk premia in the eurobond market, nor relating specifically to developing countries.

Given the emphasis upon the perceived riskiness of LDC bonds which respondents to the survey of the euro-

bond market reported in chapter eight below placed upon developing country bonds, it is to be expected that the yields on such bonds incorporate considerable risk premiums. With this assumption in mind, this section has four objectives:

1) to determine the absolute size of the risk premium paid by developing countries on their eurobond issues;
2) to establish whether or not this premium differs between groups of developing countries;
3) to determine whether or not the premium differs with the maturity of the bonds;
4) to establish whether or not the premium differs in relative size between bonds denominated in different currencies.

Merton (1974) and Bierman and Hass (1975) develop methods of pricing corporate bonds. Neither of these approaches is considered relevant to the pricing of sovereign borrower bonds because of the importance of political factors in the credit rating of a sovereign borrower. Furthermore, the concept of financial leverage (the debt to equity ratio) used by Bierman and Hass has no relevance to sovereign borrowing.

In this study is is intended to account for differences in the yield only by differences in the probabilities attached to the expected future receipts. By way of illustration, the yield to maturity on a risk free bond can be calculated by solving for r in the following equation:-

$$B = \frac{c1}{(1+r)} + \ldots + \frac{cn}{(1+r)}n + \frac{D}{(1+r)}n$$

where: B = price
c = interest receipts
(assumed to be received once a year at the end of each year)
D = repayment of principal

The yield to maturity on a risky bond can be calculated as follows:

$$B = \frac{c1p1}{(1+r)} + ... + \frac{cnpn}{(1+r)^n} + \frac{Dpn}{(1+r)^n}$$

where p = the probability of actually receiving that particular payment

Clearly with p<1 B will be lower for a risky bond with a given c and r than for a riskless bond.

The probability value will be influenced by four types of risk. For the purposes of this section, it is necessary to isolate the default risk. To achieve this, data was filtered by the following process:

- to avoid interest rate risk yield curves with similar maturity spans were selected;
- to avoid exchange risks all bonds were denominated in the same currency;
- to avoid the risk of a call provision bonds with such a provision were omitted from the data;
- the risk of unforeseen changes in tax regulations is assumed to affect the riskless bond and the risky bond in the same way.

Yield curves on a riskless borrower's bonds can then be compared with the yield curves constructed from LDC bonds. The difference between the yield curves should indicate the default risk premium paid by developing countries.

Due to limitations of data it is only possible, at this point in time, to determine the absolute size of the risk premium paid by some developing countries and whether the relative size of that premium differs between currencies. In addition, it is only possible to determine whether or not the risk premium changes with the maturity of the bonds for two countries, Mexico and Brazil, because only these countries give sufficient data observations.

To assess the magnitude of the default risk premium, yield curves

have been constructed for IBRD bonds, representing a riskless security, and for certain developing countries' bonds. Curves have been constructed for bonds denominated in US dollars and for bonds denominated in Deutschmarks. It is clear from casual observation of the constructed yield curves that not only do the developing countries concerned pay substantial premiums compared with the IBRD but that the size of the premium differs between countries.

Works by Macaulay (1938), Hayes (1956) and Robinson (1960) suggest that as there is more chance of unforeseen occurrences the longer the term to maturity, the default risk premium should be positively related to maturity. On the other hand, Graham, Dodd and Cottle (1962) note that at maturity the existing debt is repaid out of the proceeds of new debt. Therefore, the probability of repayment will be influenced by market conditions at the time of repayment. Under such circumstances, closeness of maturity may not mean less risk of default. There may, in fact, be a 'crisis at maturity'. As a potential crisis at maturity requires a difficulty in refinancing debt, it can be expected to apply only to the lesser quality risks in any particular market.

Therefore this concept may be particularly relevant to developing country bonds because they are lesser quality risks in the eurobond market. Noting the responses to the questionnaire on the eurobond market about crowding out of LDC bond issues, it may be that a crisis at maturity could occur for an LDC borrower even when general market conditions are good.

Looking at the yield curves for US dollar eurobonds, the curve for IBRD bonds is positively sloped along its whole length. This slope would preclude a crisis at maturity as is to be expected of an institution such as the World Bank. However, the yield curves for all the developing countries show a strong negatively sloped section relating to early maturities; the yield curves taking on a positive slope for later maturities. This cannot be caused by currency expectations because the

IBRD yield curve is in the same currency. However, a puzzling point is that the DM yield curves do not exhibit a negative slope for short maturities. Further analysis is required before a crisis at maturity can be considered to influence the risk premium of LDC eurobonds. This point is analysed again under the section on marketability.

The crisis at maturity concept will be less important where sinking funds and purchase funds are in operation. But it will be more important where the bonds are only repayable at maturity. All the developing countries and the IBRD have sinking funds or purchase funds operating for at least some DM issues. Similarly only Algeria and Argentina (total of 4 bond issues) did not have such funds operating on at least some US dollar bond issues. It would therefore seem that there is no a priori reason to think that the existence or otherwise of sinking funds or purchase funds is influencing the slope of the yield curves.

Turning now to the positively sloped section of the yield curve, there are examples of the risk premium rising as the term to maturity lengthens but this is not uniform between countries. However, such a situation is again not discernible for DM eurobonds. The reason may be the term structure of exchange rate expectations. Investors may be willing to take lower yields to maturity on medium term bonds because they expect the DM to appreciate substantially during their medium term holding period.

Comparing the yield curves in US dollars and Deutschmarks could indicate whether or not the risk premium differs between currencies. Indeed, looking at the yield curves constructed, it would appear that the DM curves for Brazil and Mexico are relatively closer to the IBRD curve than the same curves in US dollars.

Comparison of yield curves only gives an indication of the risk premiums that LDCs have to pay. A more exact measure is the weighted average yield on bonds outstanding. This indicator, calculated from secondary market yields, measures the risk premium paid per unit of

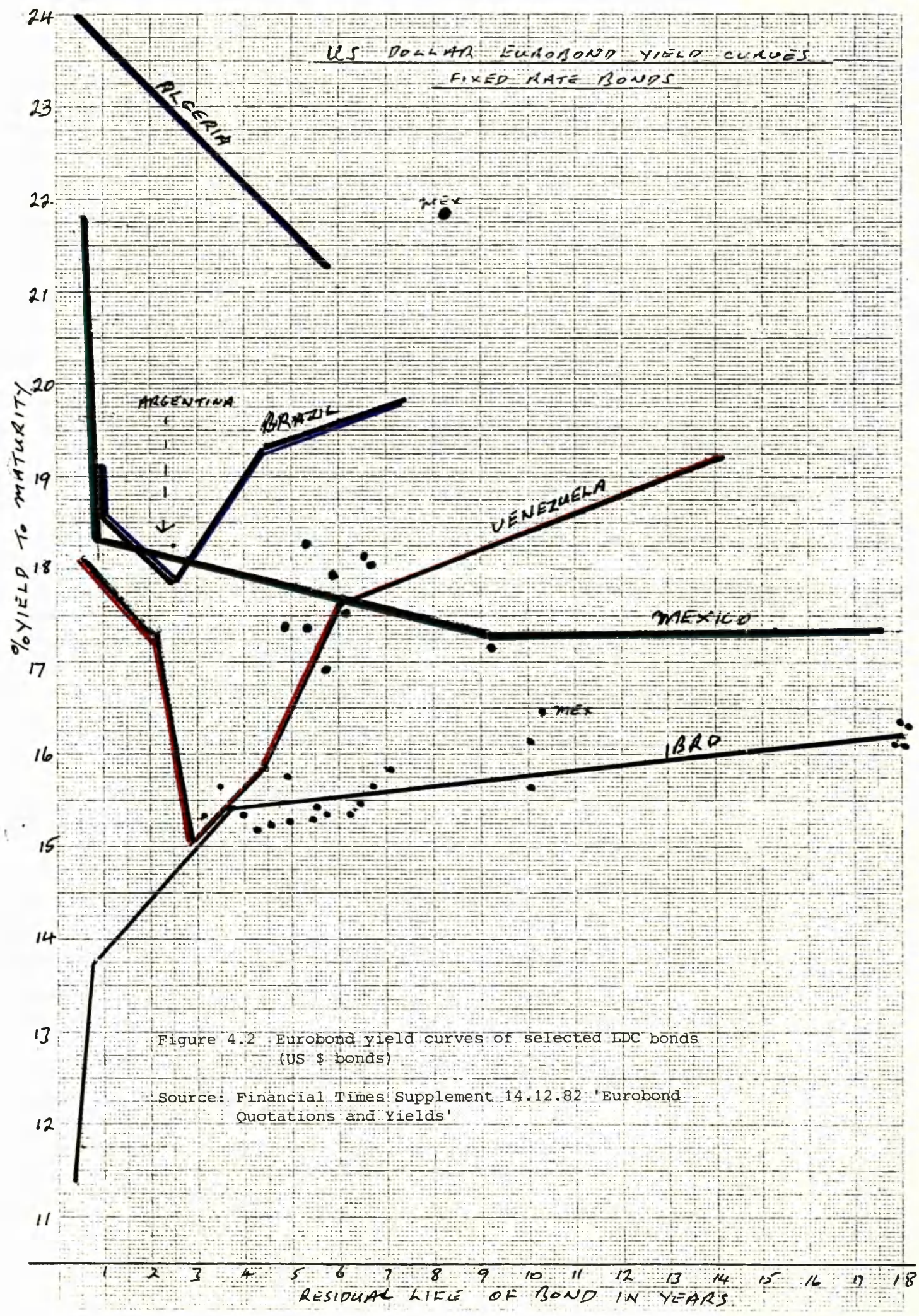


Figure 4.2 Eurobond yield curves of selected LDC bonds (US $ bonds)

Source: Financial Times Supplement 14.12.82 'Eurobond Quotations and Yields'

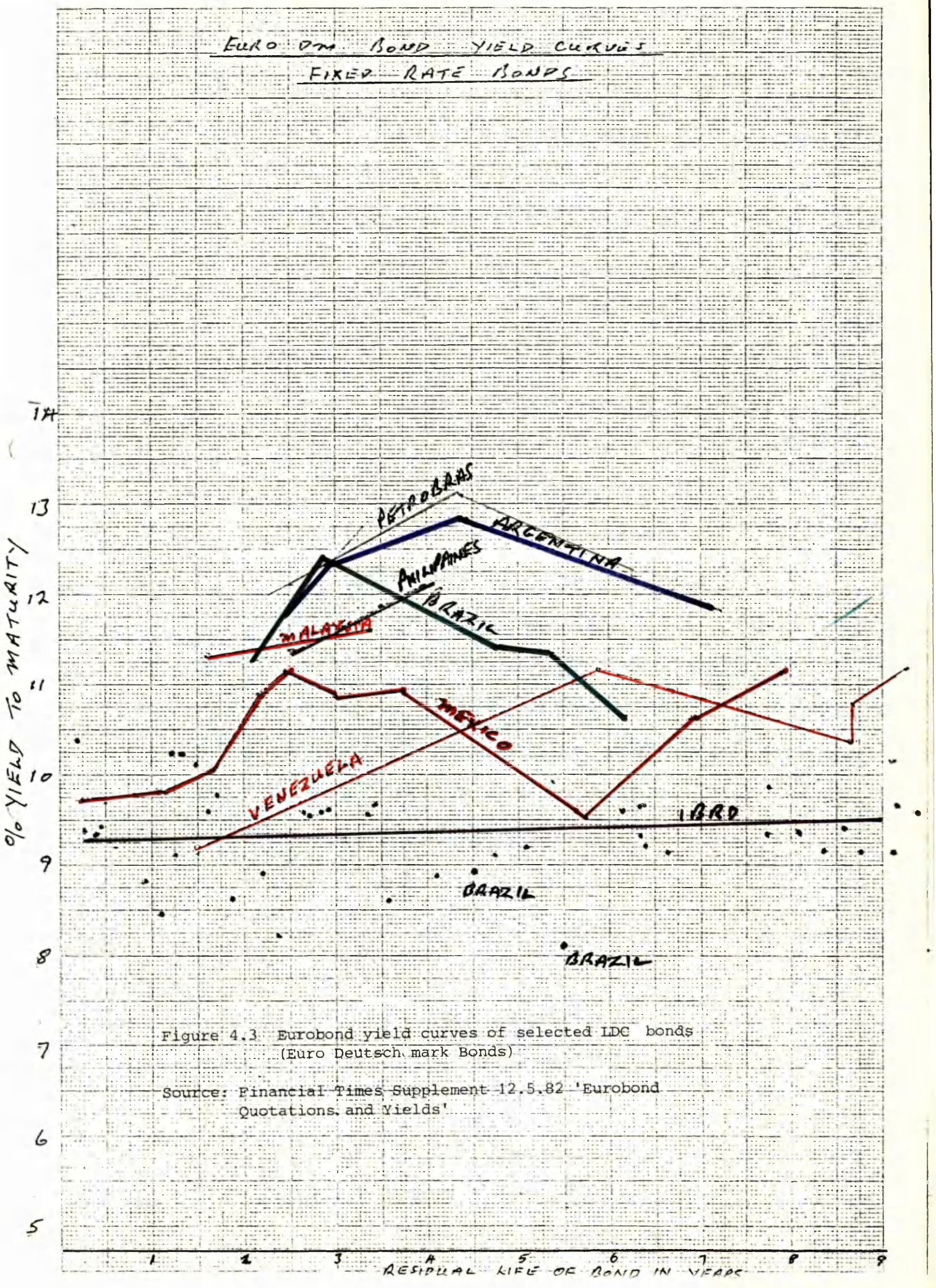


Figure 4.3 Eurobond yield curves of selected LDC bonds (Euro Deutsch mark Bonds)

Source: Financial Times Supplement 12.5.82 'Eurobond Quotations and Yields'

currency borrowed in the eurobond market. For reasons explained in the section on marketability, data relating to bonds with less than one year to maturity has been omitted from the calculations.

The risk premium is calculated as follows:-

$$Pm = \frac{QiMi}{\Sigma QiMi} Yi - \frac{QjMj}{\Sigma QjMj} Yj$$

where: Qi = amount outstanding of the i th LDC bond issue

Mi = the term to maturity of that bond issue

Yi = the yield to maturity or yield to average life as appropriate

The j th variables relate to the default-risk-free bond issue. In this case it consists of the IBRD issues.

The following table shows the risk premium for the various LDCs calculated from the above equation:-

Eurodollar bonds

	Weighted average yield	Risk premium as % of IBRD yield
IBRD	15.54	
Brazil	18.84	22.12
Mexico	17.72	14.0
Venezuela	17.06	9.8

Euro DM bonds*

IBRD	8.88	
Brazil	11.02	22.15
Mexico	10.36	16.7
Venezuela	10.87	22.5

Source: calculated from data in Financial Times 12.5.82

*owing to lack of data regarding amount of individual issues outstanding the DM rates are arithmetic means

It seems that, at least for Brazil and Mexico, the risk premium does not differ between the two currencies studied. However, the results should be treated with caution. Whereas the US dollar yields are weighted averages calculated as described above, the DM yields are simple arithmetic means because data on quantities outstanding were not available at the time of writing.

Despite these reservations, the risk premium paid by an oil importing country, Brazil, is clearly higher than that paid by oil exporters, Mexico and Venezuela. The notable point is the large difference in the risk premium for Venezuela between the currencies. This is partly due to the different methods of calculation since calculating the US $ premium as a simple arithmetic mean gives a risk premium of 12.5. However, the yield curve on Venezuela's DM bonds is more positively sloped than that of the IBRD and a larger proportion of Venezuela's bonds have longer maturities. This is clearly shown in figure 4.3.

Nevertheless this section does illustrate the substantial risk premiums which some LDCs have to pay in the eurobond market. Furthermore, the limited number of countries from which data are available bears witness to the limited access which LDCs have to the eurobond market, and to the fact that only the richer LDCs have this privilege.

In fact there is reason to believe that the risk premium paid by developing countries is actually greater than that indicated. This is because the IBRD is a more frequent borrower and also borrows by way of larger issues than any developing country. Because borrowing is relatively frequent, and because issues are large, a premium must be paid. If the IBRD borrowed at the frequency and issue size of developing countries, it could borrow at even finer terms.

As evidence to support this suggestion, one has only to compare

yields on IBRD bonds with those of UK corporations which individually are a higher credit risk and are infrequent borrowers. Yet one finds corporate bonds of similar maturity, with a large number of secondary market makers but with smaller and fewer issues offering lower yields than IBRD bonds. Examples are given in appendix 3 to this paper.

Clearly marketability is important and this is dealt with in the following section.

4.4.4 Marketability

The role of a secondary market is to provide an element of liquidity to what would otherwise be an illiquid asset. Few investors would be willing to commit funds for between five and fifteen years if there were no possibility of reselling to recover capital. The capital may be required to meet unforeseen financial commitments. However, resale may be desired because new, more attractive, investment opportunities may become available. Alternatively, the investors' perception of the current investment may deteriorate due to changing expectations of interest rates, exchange rates or default probabilities.

Clearly the marketability of the security influences its attractiveness to investors. The higher the marketability, the greater the attractiveness of the investment, not only for the reasons suggested above but because, in an established secondary market, transactions costs, implicit and explicit, will be lower.

As marketability is desired by investors who do not have perfect foresight but are risk averse, and if we make the widely held assumption that financial markets are dominated by risk averse investors, then reduced marketability must be compensated for in some way. The most obvious way is through a premium on the yield to maturity. Thus less marketable securities will command a yield premium over more marketable equivalent securities.

In the euromarkets, this premium is most noticeable between non-negotiable (non-marketable) eurocurrency deposits and negotiable certificates of deposits. There is considerable evidence that the interest rate paid on the non-negotiable deposits is higher than that paid on CDs. This is shown in the following data provided by Morgan Guarantee Trust Company in London.

Table 4.4

Eurodollar rates of interest in London

		CD	Interbank
June 1980	3 months	9.10	9.11/16
	6 months	9.05	9.3/4
Sept 1980	3 months	13.60	14.1/8
	6 months	13.65	14-
Dec 1980	3 months	17.80	17.15/16
	6 months	15.85	16.1/8
Mar 1981	3 months	14.20	14.7/8
	6 months	14.20	14.7/8
June 1981	3 months	17.20	17.7/8
	6 months	16.55	17.3/8
Sept 1981	3 months	17.35	17.7/8
	6 months	17.55	18.1/8
Dec 1981	3 months	13.55	13.7/8
	6 months	14.20	14.7/8
Mar 1982	3 months	14.80	15.3/16
	6 months	14.80	15.3/16

NB These rates are quoted in the same format as quoted in correspondence with Morgan Guarantee

The survey of the eurobond market reported in chapter eight noted the thinness of the secondary market in developing country eurobonds, therefore one would expect developing country eurobonds to pay a premium over and above that paid on bonds with a deeper secondary market.

The size of the issue and the amount outstanding may influence the secondary market yield because the amount outstanding must influence the size of the secondary market in that particular issue and therefore its marketability. This point has been discussed at the end of the section dealing with risk premiums and tentative evidence is given in appendix 3 of this paper.

It will be recalled that, when analysing the default risk premium, it was noted that the short end of the yield curves of eurodollar bonds exhibited a negative slope as hypothesised in the literature, thus suggesting the concept of the crisis at maturity. This feature was particularly noticeable for bonds issued by Mexico. This point was taken up with the London market makers of the Mexican bonds.

In the discussions the following points were made in explanation:-

1) With bonds of such short maturity there is not a two way market (bid and offer quotes) but only bid quotes are given. This would give an upward bias to the calculated yields.

2) The IBRD bonds are more frequently traded. There are many more market makers and bid and offer prices for short maturities are more easily available.

3) Most trading is conducted in bonds up to two years from syndication. After that time investors have finished swapping between portfolios and the bonds are held as investments. The price quoted is only an 'indication' price. Actual trading would be at a different price.

It therefore seems that some of the negative slope of the short end of the yield curves may be due to the lack of marketability and data inadequacies. Nevertheless, this does not preclude the influence of a crisis at maturity, but it does obscure its influence on the default risk premium.

The marketability of the bond may also be thought to influence the spread between bid and offer prices. The spread is a transactions cost and it was suggested under the section on the term structure that transactions costs may differ between maturities and thus influence the term structure.

This point was also discussed with the market makers of Mexican bonds. They suggested that the spread was influenced by the

marketability of the bond and not by the term to maturity. Thus a widely syndicated issue with a long period to maturity will trade at a narrower spread than a less popular issue with a shorter maturity.

Summary of this section

Although the interest rate costs of eurobonds are influenced by such general factors as inflation, currency of denomination and term to maturity, the interest rate costs to LDC bond issuers are specifically influenced by the risk premium required by investors.

This section shows that the few LDCs that have issued eurobonds have had to pay substantial risk premiums for such finance. The premium attached to LDC bonds compared with IBRD bonds includes compensation for reduced marketability of LDC bonds.

Although the data suggest, at least for US dollar eurobonds, that investors may perceive a crisis at maturity, it is possible that such data reflects lack of marketability of such bonds rather than any lack of confidence.

Chapter 5

THE IMPACT OF THE INCREASED PRIVATE FINANCIAL FLOWS TO THE DEVELOPING COUNTRIES UPON THE QUALITY OF BANKS' BALANCE SHEETS

5.1 Introduction

This chapter analyses the impact of past bank lending to developing countries upon the banking markets in order to determine to what extent opportunities for future lending are already constrained. The analysis covers global eurocurrency lending to the developing countries and, where possible, isolates the lending by UK banks to those countries in order to highlight the situation of the UK banks.

The following have been suggested as constraints upon future bank lending to the developing countries:-

1) The inability of those countries to service a larger stock of debt because of deteriorating terms of trade, high real rates of interest and recession in the industrialised economies.
2) Unsustainable competitive pressure reducing bank profitability and therefore the ability to maintain adequate capital.
3) Capital adequacy in the light of the inflationary environment.
4) The portfolio preferences of the banks influenced, inter alia, by risk and profitability and manifested through the exposure limits that the banks set.
5) Prudential regulations which constrain maturity transformation, exchange transformation, exposure to individual countries and impose capital requirements.

(Ossola 1980, Llewellyn 1982, Spaventa 1982)

Accordingly this chapter proceeds to:-

1) Investigate the growth of worldwide eurocurrency lending to the developing countries in relation to the growth of their GNP and growth of export revenues.
2) Analyse the growth of lending to the developing countries by UK registered banks in relation to those banks' capital bases.
3) Compare the growth of UK bank lending to the developing countries with the growth of those banks' overall balance sheets.
4) Analyse the debt servicing commitment on bank loans to the developing countries and, in particular, the influence of inflation on that commitment.
5) Investigate the degree of diversification in the banks' portfolios of loans to developing countries and the maturity structure of those portfolios.

Throughout this chapter emphasis is placed not on the absolute magnitudes but on the trend of those magnitudes over time. This is because the direction of change in the banking system is more important than the condition of that system at one point in time.

This study differs from many other studies of developing country debt (eg Dhonte 1975, Hope 1982, Maynard 1982) in that this study tries to incorporate where appropriate data are available, the influences of short term debt on the banks' balance sheets. It has been noted in chapter two, page 88 that IBRD, IMF and OECD statistics omit short term debt. Yet short term debt is important to the banks because it still ranks as exposure to a particular borrower and still has a claim on the borrower's means of debt repayment. Short term debt is important in the development process in a number of ways. It is used to finance imports of the inputs to the development process and it helps alleviate an

immediate foreign exchange or savings shortage. To the extent that short term debt is trade-related, it is generally thought to be self-liquidating, that means that when the goods, purchased with short term credit, are processed and sold the means of payment is automatically at hand. However, when considering external short term debt it is only self-financing if the processed goods are sold as exports and earn export revenues in currencies available for repaying the short term debt.

There is growing concern for the size of the short term debt owed by some borrowers (Calverly 1982, FT 27.4.82, Amex Bank 1982). This concern has become more important because many of the traditional country risk indicators relate only to medium and long term debt. Yet short term debt has to be serviced and competes with other debt for the nation's stock of foreign exchange.

Figures from the Bank for International Settlements show that short term debt owed to banks by developing countries, excluding off-shore banking centres, rose from US $39 billion in 1976 (quoted by Calverly 1982) to US $162.5 billion in 1981 (BIS 1982). In 1981 the short term debt accounted for 49.7% of all LDC debt owed to banks in the BIS reporting area (BIS 1982).

Clearly when evaluating country risk the use of the indicators relating only to medium and long term debts is inadequate. The most appropriate indication of financial wealth is total cash flow. This has the advantage of covering all debt payments and avoids distortions due to borrowers shifting from well-publicised medium and long term debt into short term debt.

This distortion is made yet worse when it is realised that much short term debt also comes from suppliers. The banks and suppliers have little idea of the total amount of short term credit that has been extended and therefore there is an urgent need to improve the quality of information in this respect.

Cash flow management becomes very important for the attainment of

economic policy objectives but it must be doubted whether many developing governments have the appropriate information of sufficient quality. This assumption is reinforced when the diversity and quantity of supplier credits is recognised. To rectify this weakness at least in terms of bank credit, some use is made in this chapter of the BIS figures relating to external claims and liabilities of banks in the BIS reporting area. As this data reflects the total external positions of the banks in that area both short term and medium/long term debt are covered. The weaknesses of the BIS coverage of the eurocurrency market has been recognised in chapter two. However, it is considered that for the purposes of this chapter the advantages of covering short term debt outweigh the disadvantages of using this data.

5.2 Growth of worldwide international bank lending to developing countries

BIS figures show that loans by banks in the BIS reporting area to developing countries grew from US $99.4 billion in 1976 to US $325.1 billion in 1980, an overall growth rate of 327%. IBRD figures show that total medium and long term debt grew from US $77.9 billion in 1971 to US $426 billion in 1980, while such debt from financial institutions grew from US $11.5 billion to US $162.5 billion, an increase of 1439% over the same period (World Debt Tables 1981). The OECD figures give US $16.6 billion and US $180 billion as coming from capital markets during this period, with US $9.4 billion and US $149 billion coming from banks. In fact, these figures for banks underestimate the true position because they exclude export credits. The magnitude reported by OECD reflects the larger number of countries covered by that organisation compared with the IBRD.

For the purposes of analysis, the borrowers are divided into the same four income groups as used in chapter one, ie:

Upper middle income countries

Middle income countries

Low middle income countries

Low income countries

The writer has taken the BIS figures and aggregated the amounts due to or from the 91 developing countries used in the IBRD classification of income groups given above.

Table 5.1 Comparison of growth of loans, GNP and exports

Income Group	1976	1980	Growth loans	Growth GNP	Growth exports
Upper Middle Income Group	23,240	75,412	324%	185%	219%
Intermediate Middle Income Group	55,495	203,182	342%	183%	228%
Lower Middle Income Group	15,145	41,030	271%	190%	220%
Low Income Group	1,500	5,513	368%	187%	170%
Total	99,380	325,137			

Figures in millions US $

*This analysis begins with 1976 data because the BIS did not publish sufficiently detailed data before that date

These figures show growth rates of loans well in excess of those of GNP and exports but this does not necessarily mean that the risk of default is greater in 1980 than it was in 1976. It may be that the loans were used for investment in imported capital components of investment projects that have a long gestation period. Indeed, it would be expected that loans would be used for such purposes if economic development were a major policy objective of these countries. On the other hand, if these loans have been used to finance consumption so that there is no potential increase in output the sales of which will service the debts, then there is prima facie cause for concern.

Even with the loans being used for investment, the external nature of these loans requires that they must generate or save foreign exchange

in order to be serviced. If the additional foreign exchange resources are not made available for debt servicing, default may occur.

The figures given in table 5.1 are expressed in nominal terms despite the fact that inflation does erode the real value of debt and may result in a net transfer of resources to the debtor as the real value of amortisation payment at the time of payment is less than the real value of the loan when originally drawn down. However, inflation will only cause a net transfer of resources from the creditor to the debtor if the interest rate charged is below the rate of inflation. If the rate of interest is above that of inflation, the net transfer will be from the debtor to the creditor.

A notable feature of much debt contracted on commercial terms has been that it bears a floating rate of interest. To the extent that these rates keep pace with or are higher than inflation, any net transfer from creditor to debtor is cancelled out and where they result in a positive real rate of interest, the net transfer will be from the debtor to the creditor.

Therefore, although inflation may reduce the burden of amortising debt, it is necessary to analyse the influence of interest rates upon the resource transfer. This analysis is made in the section covering debt servicing on page 225 below.

It is not possible to conclude whether the growth of bank lending has been 'good' or 'bad' from the banks' point of view without any indication of the change in quality of bank debt assets that has resulted. This quality is dependent upon ability of the borrowers to service those debts; this is discussed below (refer page 225).

5.3 Growth of net bank exposure to developing country borrowers

As the BIS figures are aggregated to the single country level, it would appear that countries are depositors and borrowers at the same instance. Indeed this is so as the governments keep some of their foreign

exchange reserves and external working balances with banks in the BIS reporting area. Moreover, it has already been shown that the poorer developing countries are net depositors with the banking system.

Figures in table 5.2 show the level of deposits held by the 15 major borrowers as at 31 December 1981. The ratios of loans to deposits ranges from highs of 552% and 1013% for Korea and Brazil respectively, down to 96% and 97% for Indonesia and Taiwan.

Table 5.2

Net bank exposure to developing country borrowers

	Deposits	Loans	Loans as a % of deposits
Africa			
Algeria	3.7	8.3	224
Nigeria	1.7	6.0	352
Asia			
Indonesia	7.5	7.2	96
Korea	3.6	19.9	552
Philippines	3.6	10.2	283
Taiwan	6.8	6.6	97
Thailand	1.7	5.1	300
Malaysia	3.2	4.4	137
Latin America			
Argentina	6.7	24.8	370
Brazil	5.2	52.7	1013
Chile	4.1	10.5	256
Colombia	4.3	5.4	125
Mexico	12.3	56.9	462
Venezuela	19.6	26.2	133
Ecuador	.84	4.4	523

Source: Bank for International Settlements
Maturity Distribution of International Bank Lending July 1983

Amounts: Billions US $

It is tempting to net out the deposits with the loans to arrive at a figure for net bank exposure to a particular country. However, at this level of aggregation the writer considers that such action is invalid. The reasons are: firstly, a borrower considering default would either have run down its deposits in order to avoid defaulting or removed its deposits from any banks to which it owed money. Providing the deposits were removed before the loans are due, such action cannot be prevented. Secondly, the banks' right of set-off is strictly governed by law. Therefore, a bank can only set-off deposits against loans if the legal beneficiary of the deposits is the same legal personality as the borrower. The figures given by the BIS do not indicate to what degree the depositors and the borrowers are the same personality. In many cases it is reasonable to assume that they are not. Thus, the banks will not be able to net out deposits with loans. Indeed in many cases the deposits will be held in different banks from those that extended the loans.

It is likely that only in the case of a gross political act of repudiation would the deposits be totally off-set with the loans. This will result from a freeze on assets of the repudiating country in the banks' host country. However, as mentioned above, the repudiating country is unlikely to leave funds upon deposit where it is contemplating repudiating debt.

Therefore the writer considers the concept of net exposure is invalid as a means of representing the banks' risk of lending to developing countries.

5.4 Growth of UK bank lending to developing countries in relation to the banking system's capital base

An inadequate capital base can constrain bank lending in the following ways:-

1) Bank supervisors, or the banks themselves, may set minimum capital assets ratios.

2) There may be a minimum acceptable or permissable level of exposure to a single borrower set in terms of capital.

3) If depositors consider capital to be inadequate, the banks will have difficulty attracting funds.

Accordingly, this section analyses the relationship between bank capital on one hand and total lending to non residents and to the 15 major borrowers on the other. The analysis covers three dates: January 1978 ie before the second oil shock, December 1980 ie the end of the decade and August 1982 ie the most recent figures at the time of writing. Unfortunately, comparable data for 1973 ie just before the first oil shock are not available.

UK banking statistics exhibit considerable shortcomings when required for separate analysis of capital in relation to domestic and international business. In particular Capital and Other Funds in Tables 3.1 to 3.10 of The Bank of England Quarterly Bulletin (BEQB) includes items 'in suspense and transmission' for the individual groups of banks covered. In order to arrive at a proxy for capital and other funds a rather crude calculation has had to be made as described below.

The concept of capital gives rise to problems in the context of the UK banking statistics because these cover the capital of UK branches of foreign banks. Clearly the major capital stock of those branches is that of the parent organisation in the headquarters country. Therefore, this section analyses the advances to non residents in relation to the capital stock of UK registered banks as given in Table 3 of the Bank of England Quarterly Bulletin.

The method of calculating the figures for capital stock from the Bank of England Quarterly Bulletin Table 3 is as follows. The summary table 3.1 gives figures for capital and for transit and suspense items. Tables 3.2 to 3.6 inclusive and Table 3.10 give a combined figure for

capital items, suspense items and transit items for various groups of UK registered banks.

The proportion of suspense and transit items in total capital suspense and transit items is calculated for all banks from Table 3.1. Then the combined capital, suspense and transit figure for each banking group is deflated by the proportion calculated from Table 3.1 in order to arrive at an approximation for capital for each of the banking groups registered in the UK. These groups cover:-

1) London Clearing Banks
2) Scottish Clearing Banks
3) Northern Ireland Banks
4) Accepting Houses
5) British Banks: Other
6) Consortium Banks

This methodology for isolating the influence of suspense and transit items from the Bank of England figures is considered to be acceptable because these items are mostly associated with the cash transmission system. This system is dominated by the UK registered banks. The figures are given in table 5.3 below.

Having derived figures for the UK registered banks' capital stock, figures for those banks' share of total non resident lending must also be calculated. This latter set of figures includes sterling and foreign currency lending to non residents and also comes from Tables 3.2-3.6 and 3.10 of the Bank of England Quarterly Bulletin and are given in table 5.4 below.

The figures in this table show a declining ratio of capital to non resident advances from 40% to 28% in just four and a half years. The absolute size of the ratio is misleading because this capital is also the capital associated with the banking business conducted with UK residents which is not analysed here. Nevertheless, the trend should alert us to a potential constraint on future lending to non residents.

Table 5.3 Ratio of capital to non resident loans

	January 1 1978	January 2 1980	August 3 1982
Capital of UK registered banks	9341	12409	17906
UK registered banks' £ & FC loans to non residents	22648	32795	63924
Capital as % of loans to non residents	41.2	37.8	28.0

Table 5.4 Proportion of total UK banks' non resident loans accounted for by UK registered banks

	January 1 1978	January 2 1980	August 3 1982
Capital	9341	12409	17906
Total non resident advances	84946	123551	250021
Foreign banks' non resident advances	62316	90756	186097
UK banks' non resident advances	22648	32795	63924
% of non resident advances due to UK registered banks	26.6	26.5	25.6
% of London non resident advances due to foreign banks	73.4	73.3	74.4

Amounts: £ millions

Sources: 1 From Bank of England Quarterly Bulletin March 1979

2 " " " " 1980

3 " " " December 1982

Table 5.5

UK registered banks' exposure to 15 major LDC borrowers

	Jan 1978	Jan 1980	Aug 1982
Argentina	227	632	895
Brazil	1,340	1,957	27702
Chile	63	210	506
Colombia	46	74	177
Mexico	1,153	1,880	3,092
Venezuela	234	934	1,082
Ecuador	51	108	184
Algeria	303	376	350
Nigeria	85	259	487
Indonesia	130	102	134
Korea S	161	458	896
Philippines	115	311	532
Taiwan			
Thailand	36	92	145
Malaysia	85	114	409
TOTAL	4,029	7,507	11,591
Amounts US $ millions			
Loans as % of capital	43	60	65
5 largest borrowers as % of capital	$3,257	5,861	8,663
	% 34.8	47.2	48.4
Largest borrower as % of capital	14.3	15.7	17.8
Source: Calculated from BEQB	Table 22 June 1978	Table 12 March 1980	Table 12 Sept 1982

The banks' capital stock is used as a cushion to meet unexpected losses from lending. It is therefore constructive to analyse the impact of an assumed total repudiation by individual major developing country borrowers given the trend of declining capital to loan ratios.

To make this analysis we must assume that the distribution of advances by the UK registered banks to these major borrowers is the same as that of all non resident advances by those banks.

We take the UK banks' exposure to the 15 major borrowers and deflate this exposure by the proportion of non resident advances of foreign banks in the UK to all UK banks' non resident advances given in table 5.4 above. The result will be the proportion of total exposure to these 15 major borrowers that is attributable to UK registered banks. The figures are given in table 5.5 above. No account has been taken of any deposits held because of the difficulties of applying the right of set-off as explained on page 214 above. The features to note are: firstly, loans to these borrowers as a proportion of capital have increased by over 50% in just over four and a half years but still are less than threequarters of the banks' capital. Secondly, the proportion of lending to the five biggest borrowers has increased during this period to 48% of the banks' capital. The largest borrower accounts for 14.3% of capital in 1978 and this rises to 17.8% in August 1982.

We cannot say, from the absolute size of the figures, that the UK banks have excessive exposure to these major borrowers. However, the trends of greater concentration and lower capital/asset ratios are both moving in the direction of greater risk to the banks.

Having said that, three caveats are in order. Firstly, the figures aggregate across all UK registered banks when in fact it is reasonable to expect that different banks have differing geographical concentrations of external business. Therefore it is probable that some banks are more exposed than others to the higher risk LDC borrowers. This may be particularly so where the banks through their branch or subsidiary

network are deeply involved in certain Latin American or African states. Nevertheless it is felt that the above analysis is legitimate because it is the strength and stability of the UK banks as a whole which is important. One bank may get into financial difficulties but past experience has shown that a healthy financial system will come to the aid of the weak institution.

The second caveat is that many of these loans will represent buyer credits ie loans made by the banks to non residents specifically to finance UK exports. Many of these credits will be covered by Export Credit Guarantee Department Buyer Credit Guarantees. These guarantee the banks for the full principal and interest outstanding. Furthermore, given the nature of syndicated loans, many participations in syndicates managed by foreign banks outside London will be buyer credits insured by the various official export credit insurance agencies of other countries. As these loans are insured by a government agency of an OECD country, they do not represent exposure to a developing country borrower.

The third caveat is that advances outstanding do not represent the whole of the risk that these banks have outstanding to non residents. There will be considerable contingent liabilities in terms of letters of credit and various types of guarantees. However again many of these will be supported by ECGD guarantees.

Having noted these caveats, there are three areas pertaining to the growing bank exposure to developing countries that are worthy of further analysis. These are:-

1) The growth of lending to LDCs compared with the growth of the banks' balance sheets overall
2) The maturity structure of this bank lending
3) The degree of portfolio diversification of bank lending

The first area is analysed here and the other two are discussed in subsequent sections of this paper.

5.5 Growth of bank lending to LDCs compared with growth of banks' balance sheets

Again, we use data applicable to the UK registered banks because LDC lending should be compared with total balance sheets including domestic business and with total lending to non residents. If the foreign banks were included it would not be possible to measure their total balance sheet using Bank of England data for the London market.

Table 5.6 Growth of UK bank lending in relation to growth of UK bank balance sheets

	January 1978	January 1980	August 1982
Total balance sheet size of UK registered banks	87715	113884	211711
Total non resident advances UK registered banks	22648	32795	63924
Non resident advances as % of total balance sheet	25.8%	28.8%	30.0%
Advances to 15 major LDCs	4029	7507	11591
Advances to 15 major LDCs as % of total balance sheet	4.6%	6.6%	5.4%
Advances to 15 major LDCs as % of total non resident advances	17.8%	22.9%	18.1%

Amounts in £ millions

These figures show that between 1978 and 1982 loans to non residents grew in absolute terms, and as a proportion of the UK registered banks' balance sheets. However, the proportions of the banks' total assets and the proportion of non resident loans accounted for by the 15 major LDC borrowers rose between 1978 and 1980 but declined between 1980 and 1982. Thus, on balance, lending to these major borrowers has grown less rapidly than total asset growth.

Although this state of affairs indicates no substantial deterioration of the ratios one should not be complacent because the absolute amounts of exposure are much greater and have grown at a faster rate than the banks' capital base (ref page 215 above). Moreover the caveats noted on page 221 above also apply to this analysis.

Furthermore, although the proportion of the banks' balance sheet

accounted for by loans to developing countries has been almost constant, if the quality of those loans has declined then the quality of the banks' overall balance sheets would have declined.

The quality of a loan portfolio is determined by the rate of return in relation to the risk involved. As risk is a subjective concept, the quality of the portfolio must be judged by objective criteria such as loan loss ratios and the earnings from portfolios. In this respect UK statistics again exhibit shortcomings because it is not possible to differentiate loan losses and earnings on loans to developing countries from all domestic and non resident loans.

Fortunately, figures for US banks' loan loss ratios are quoted by Davis (1977) and reproduced here. These figures may be used as a guide to the loan loss ratios experienced by UK banks because of the syndicated nature of many loans and because a large proportion of loans made by UK banks were in fact made by UK-based branches or subsidiaries of banks headquartered in the USA.

		International loan loss	Domestic loan loss	
1975	for 6 major US banks	0.06%	0.18%	
Ave 1971-75	for 7 banks with most overseas business	0.12%	0.37%	
1975	for above 7 banks	0.19%	0.74%	(for overall loan portfolio)

Source: Davis 1977, p139

These clearly show that the loan loss experience of US banks on loans to mainly sovereign developing country borrowers has been much less than on loans to domestic ie North American borrowers.

Furthermore, the figures in table 5.4 below, taken from an IMF study (IMF 1981, p42), show that the spreads on eurocurrency loans to non OECD countries were consistently above the spreads on loans to OECD based borrowers. Thus, we can conclude that loans to developing countries

provide a higher return than loans to the industrialised countries. If loans to developing countries do provide higher profits to the banks, this will strengthen the banking system by allowing larger additions to the banks' capital base through higher retained earnings.

Table 5.7

Spreads over LIBOR 1977-1980

		OECD countries	Non OECD countries (excludes CMEA countries)
1977	I		
	II		
	III		
	IV	0.84	1.46
1978	I	0.82	1.22
	II	0.80	1.26
	III	0.72	1.15
	IV	0.69	1.03
1979	I	0.65	0.95
	II	0.62	0.87
	III	0.67	0.76
	IV	0.49	0.74
1980	I	0.56	0.78
	II	0.57	0.84
	III	0.54	0.82
	IV	0.56	1.03

Source: Appendix 1, p42
International Capital Markets IMF 1981

The outcome of many of the loans to developing countries will not be known for some years to come, but one feature that has become increasingly noticeable is the frequency of debt rescheduling. This topic is covered in detail in chapter six, including an analysis of the risks involved, but at this stage it is worth noting that the terms attached to rescheduled debt often make such loans more profitable than loans to alternative lenders. It could be suggested that the higher yield is required to compensate for the higher risks that are associated with rescheduled debt. However, in chapter six it is argued that debt rescheduling actually reduces the risks associated with that debt.

5.6 The servicing of the growing developing country debt

It was stated on page 212 above that, although growth of debt has been faster than that of GNP and of exports, that does not of itself indicate that the risk of default has increased and therefore the quality of the banks' assets reduced.

What really does influence the quality of these assets is the ability of the debtor to service the debt. In order to be able to service an external loan that debt must be used in a way that:-

1) generates a return greater than the debt service payments;
2) that return can be converted into the means of making debt service payments. This will generally mean earning foreign exchange or saving foreign exchange.

Point 1) is the efficiency criteria and point 2) is the transferability criteria.

It would therefore seem that a logical start to an analysis of debt service problems would be to carry out numerous micro economic studies of the use of external debt. However, there are informational difficulties in that the efficiency criteria may involve the use of shadow prices and, given the fungibility of financial capital and of loans for programme financing, it is difficult to identify the projects being financed (Gutowski & Holthus 1982).

Furthermore, where this debt is incurred by governments, the return may be in social as well as private benefits. As such those social benefits may not directly generate the means of payment for debt servicing purposes. Therefore the servicing needs will have to come from the nations' savings. Thus, not only must the investment project be efficient, but unless it makes an explicit financial return, national savings must rise to service that debt. What is more, not only must the savings rise, but it must be convertible into the means of debt service payments. Therefore the use of the external financial capital must result in new foreign exchange resources being generated or released from

alternative uses to service the foreign debt.

Clearly, unless one is analysing the fortunes of a clearly identifiable project with independent control over its foreign exchange revenues, the analysis of the debt service capacity of developing countries has to be carried out at the macro economic level.

There is a considerable body of literature developing macro economic models relating the optimum debt burden to growth rates; for example Domar (1957), Avromovic (1964), Hayes (1964), Dhonte (1975), Soloman (1977), IMF (1981). These models assign crucial importance to the real rate of interest, the growth rate of world demand, the savings ratio and the terms of trade. However, these models do not take account of the floating rate nature of a growing number of the loans to developing countries. Thus, the interest rates on these loans are determined by the financial market conditions in the industrialised world. Accordingly, the real rate of interest on these loans influences not only the cost of servicing the debt but also the ability to transform domestic savings into foreign exchange via exports by influencing aggregate demand in the industrialised world.

We thus are able to define three types of problem situations for debtor countries relating to the use of the funds:-

1) The project or use of funds is not efficient ie the rate of return does not cover the cost of the loan. The more the country borrows the worse its predicament will get.
2) Although the project is technically efficient, the country is unable to transform the proceeds or sufficient domestic savings into foreign exchange.
3) The projects are technically efficient but the rate of return includes a 'social' element and the government is unable to mobilize sufficient domestic savings to service the debt.

There is a certain irony about debt servicing. To the extent that interest and amortization payments are in some doubt, the lending banks will require to receive both types of payment. However, the lower the perceived risk of default on these payments, particularly interest payments, the less the bank will seek repayment. Indeed the banks will be more willing to roll over such debt. This action itself reduces the risk of default by reducing the claim on the borrowers' cash flow to that of interest payments only.

Clearly the amortization schedule, as well as the rate of interest, influence the "efficiency" of the project. Therefore, efficiency should not only be considered in terms of the "performance" of the investment but also in terms of the appropriateness of the "financial package" negotiated. In this respect the amortization schedule is important because the relationship of amortization (outflow) to cash (foreign currency) inflow will have a considerable bearing upon the transferability problem. Where the amortization schedule (maturity structure) of the loan is too short given the timing of the cash flow of the borrower, the financial package is as "inefficient" as it would be if the rate of interest charged were higher than the rate of return of the project.

The figures given below show how total amortization and financial market amortization have changed relative to GNP and exports between 1976 and 1980 for each of the four income groups of developing countries. The data relates to publicised medium and long term loans and therefore excludes short term loans. To the extent that these figures show both total and financial market amortization increasing relative to GNP and to exports, then the financial packages made available to developing countries would seem to be inefficient. The fact that the proportion of GNP or exports absorbed by financial market amortization has grown fastest would suggest that these financial packages could improve their efficiency for the benefit of both parties. Maybe the growing use of

reschedulings is partly to be explained by this financial inefficiency.

Table 5.8 The changing burden of amortization 1976 and 1980

Amortization

		Upper middle income	Inter middle income	Lower middle income	Low income
Total amort ÷ GNP	1976	0.64	1.19	1.22	0.74
	1980	0.85	2.04	1.52	0.64
Total amort ÷ exports	1976	2.18	6.66	5.0	6.7
	1980	2.47	9.16	5.45	6.38
Financial market amort as % of total	1976	46.1	46.3	19.2	6.6
	1980	57.9	63.4	38.1	11.2
Financial market amort ÷ GNP	1976	0.3	0.6	0.2	0.05
	1980	0.5	1.3	0.6	0.07
Financial market amort ÷ exports	1976	1.0	3.1	0.9	0.4
	1980	1.4	5.8	2.1	0.7

Source: Calculated from IBRD World Debt Tables 1981

The efficiency and transferability problems are also influenced by interest rates and, to the extent that interest rates are floating rates, by inflation.

Taking transferability first, it has already been noted that if inflation causes interest rates to rise in the borrower's export markets, and these higher interest rates have a dampening effect upon aggregate demand, exports to those markets will be adversely affected. Thus, the transferability problem will be exacerbated. Of course, inflation may cause product prices to rise in these markets thus mitigating the transferability problem.

Turning to efficiency, interest rates and their relationship to the rate of return on the investment project influence the efficiency of that project. Moreover, inflation influences this efficiency when loans attract floating rates of interest. When these floating rates rise in

response to inflation, the nominal interest cost rises reducing the efficiency of the financial package. In fact what actually happens is that the real amortization schedule is shortened relative to the actual gestation period of the investment, thus reducing financial efficiency. The effects of inflation upon the real amortization of a loan are clearly shown in the following table taken from Kincaid (1981).

Table 5.9

Effect of inflation on a loan

	Time periods				
	1	2	3	4	5
No inflation[2]					
Loan outstanding at beginning of period	1,000	800	600	400	200
Amortization schedule	200	200	200	200	200
Interest payments	-	-	-	-	-
Debt service (sum = 1,000)	200	200	200	200	200
Average period real loan is outstanding - 3 periods[3]					
Inflation (10 per cent)					
Fixed interest rate loan					
Loan outstanding at beginning of period	1,000	800	600	400	200
Amortization schedule	200	200	200	200	200
Interest payments	-	-	-	-	-
Debt service	200	200	200	200	200
Real debt service (sum = 758.2)	181.8	165.3	150.3	136.6	124.2
Variable interest rate loan[4]					
Loan outstanding at beginning of period	1,000	800	600	400	200
Amortization schedule	200	200	200	200	200
Interest payments due to erosion of outstanding principal[4]	100	80	60	40	20
Debt service	300	280	260	240	220
Real debt service (sum = 1,000)	272.7	231.4	195.4	163.9	136.6
Average period real loan is outstanding - 2.66 periods[5]					
Price index	1.1	1.21	1.331	1.464	1.611

This table shows with a constant real rate of interest (here assumed to be zero), inflation reduces the real amortization. However, where the floating interest rates keep pace with inflation, the real amortization is not reduced, it is in fact accelerated but the total real amortization is not increased. Thus, in the examples given above, the average period that a 5 year loan is outstanding, assuming no inflation and equal amortization, is 3 years; with 10% inflation that period is reduced to 2.66 periods. Indeed the influence of inflation in reducing the real maturity is greater the longer the maturity of the loan.

The following figures show the influence of rising interest rates upon the debt service costs of the developing countries.

Table 5.10 Impact of interest rates on debt service burden 1976-1980

		Upper middle income	Inter middle income	Lower middle income	Low income
Total interest as % of GNP	1976	0.43	0.84	0.64	0.41
	1980	0.7	1.84	1.22	0.41
Total interest as % of exports	1976	1.46	4.7	2.63	3.69
	1980	2.03	8.25	4.35	4.1
Financial market interest as % of total interest	1976	55.9	62.1	42.2	8.0
	1980	66.8	76.9	53.9	18.34
Financial market interest as % of GNP	1976	0.24	0.52	0.27	0.03
	1980	0.47	1.4	0.6	0.07
Financial market interest as % of exports	1976	0.8	2.9	1.1	0.3
	1980	1.3	6.3	2.3	0.7

Source: Calculated from IBRD World Debt Tables 1983

These figures show that the total interest element of servicing public medium and long term debt has roughly doubled between 1976 and 1980 except for the low income group of countries where there has been no change. Furthermore, the total interest burden has risen relative to exports but at a slower rate than relative to GNP.

Regarding the figures for financial market interest, we note first of all, the growing proportion of this form of interest in the total interest burden. It is also noted that the burden of financial market interest payments has grown faster in relation to GNP and exports than has total interest.

Both the trends for total interest and financial market interest payments are alarming. They indicate that not all the additional external finance obtained between 1976 and 1980 is earning sufficient external resources to meet the interest servicing requirements. This suggests that debt has either been incurred to finance consumption or that the financial package has become inefficient.

Two areas of inefficiency will be examined. Firstly, rising interest rates on floating rate debt. Secondly, inadequate grace periods on loans particularly in relation to interest payments.

The impact upon interest rates of inflation and the results on the real maturity of the loan have already been noted. However, this does not fully explain the deteriorating interest payments to exports ratio. One further factor is the increasing importance of floating rate debt from commercial sources. This is clearly shown in the following figures showing this trend on a regional basis.

Table 5.11 The changing importance of floating rate loans

	% of floating rate loans in total loans	
	1971	1980
Africa South of Sahara	2.7	21.1
East Asia & Pacific	2.2	26.1
Latin America & Caribbean	7.4	58.5
North Africa & Middle East	2.2	19.2
South Asia	-	0.9
More developed Mediterranean	4.2	29.0

Source: IBRD World Debt Tables 1983

A second factor is that the 'inflation rate' that influences money market rates in financial centres may not be the same rate that influences export prices. A comparison of any country's import price

index and retail price will confirm this.

A third factor is that interest rates may be influenced by domestic monetary policy in the industrialised countries. Thus, once again, rising interest rates may not be compensated by rising prices of developing country exports. The recent monetary history of the USA and UK, whereby real rates of interest are high in historic terms, confirms this.

Clearly the increased interest rates do increase the risk of default, not only by making a greater claim in nominal terms on the nation's foreign exchange reserves, but also by shortening the real maturity of the loans and affecting the financial efficiency of the project and the financial package. This necessitates the borrowers' refinancing or rescheduling their debts so that the real maturity of the loan matches the gestation period of the project for which the loan is required.

However, to the extent that interest rates rise faster than export revenues, the debt service ratio deteriorates. As this ratio is used by bankers in evaluating country risk, this deterioration makes it more difficult for the sovereign borrowers to obtain the finance they require. The influence of rising interest payments on the debt service ratio is reinforced by the influence of those payments upon the current account of the balance of payments. The higher interest payments cause the current account to deteriorate when in fact, as part of those payments are amortization, they should be recorded in the capital account. Thus, the balance of payments/GNP ratio deteriorates which is another country risk indicator used by the lending banks.

If the increased risk due to the shortened real maturity of the loan is to be avoided, refinancing or rescheduling is required and yet while the banks maintain exposure limits and capital adequacy measures in nominal terms, these will act as constraints to further lending. Furthermore, as inflation adjusted interest rates mean a shortening of the real maturity, they reduce the risk to the financial intermediary.

This is because the eurobanking financial intermediary attracts its deposits by way of floating rates of interest. Thus as deposit interest rates compensate for inflation, the real maturity of the deposits also falls. However, as noted above, the proportionate reduction in the real maturity of a loan increases with maturity. Therefore, given the degree of maturity transformation by the eurobanks, the real reduction in loan maturity will be more than proportionate to that of deposits. Thus one risk, that of maturity mismatch, is reduced, at least in real terms. This in itself should be recognised by the banks when considering requests for refinancing and rescheduling.

The problem of inadequate grace periods on loans divides itself into two areas: one the grace period on principal, the other the grace period on interest payments. The grace period on principal creates less of a problem. The solvency of the borrower will be enhanced, and therefore risk of default reduced, if commencement of amortization payments coincides with the cash flow from the project (including increased foreign exchange resources resulting indirectly from social projects). Such terms are a common feature of financial packages and easily adjusted by the lending banks to coincide with the expected cash flow from the project.

However, a grace period regarding interest payments is much less common. It will be argued in chapter six in this thesis (page 272) that banks may not require that principal is repaid but that it is essential that interest receipts remain current. Consequently, granting a grace period on interest payments causes an immediate deterioration of the bank's profitability. Given the high growth rate of bank lending to developing countries during the late 1970's, if the granting of such grace periods was to become common practice, the banks' internal finances would be under severe pressure. As a result of the infrequent use of grace periods on interest payments, a deterioration of the interest payments to GNP and interest payments to exports ratios is to be expected

when there is new borrowing and projects have gestation periods that extend beyond the current accounting period.

To give some indication of the average of grace periods on amortization, the following figures have been extracted from the IBRD World Debt Tables, 1981:

Table 5.12 Average grace periods on loans 1971 and 1980

	1971	1980
Africa South of Sahara		
Private creditors	2.4	3.1
Official creditors	8.2	6.6
East Asia & Pacific		
Private creditors	2.6	3.1
Official creditors	6.9	6.1
Latin America & Caribbean		
Private creditors	2.5	3.7
Official creditors	5.3	4.4
North Africa & Middle East		
Private creditors	2.5	1.6
Official creditors	5.6	6.3
South Asia		
Private creditors	2.2	2.1
Official creditors	7.3	8.1
More Developed Mediterranean		
Private creditors	5.5	4.7
Official creditors	7.9	6.4

These figures present a picture of inadequate grace periods particularly from private creditors and for some regions grace periods have been falling over time. To the best of the writer's knowledge, figures for periods of grace on interest payments are not available.

The amortisation schedule of the debt is also influenced by the willingness of the borrowers and lenders to increase short term debt relative to long term debt. The current concern about the growth of short term debt has already been noted. The increased growth of short term debt appears to be due to two main factors. Firstly, as interest rates

generally have reached historically high levels, borrowers have shifted into short term debt in order to reduce interest costs. As the banks perceive the growing debt of the developing countries as constituting a higher level of risk, those banks have shortened the maturities available in order to reduce the time period of their exposure to a particular borrower. Both these actions ignore the influence of shorter maturities upon the cash flow of the borrower. The result has been a considerable increase in debt service payments. This greater debt service burden has in fact increased the risks of default which the lenders sought to avoid and has increased the burden upon cash flow which the borrowers sought to avoid. These actions by the borrowers and the lenders increase the risks of default because short term debt has the wrong maturity structure for economic development and macro economic adjustment.

The following table shows the impact upon debt servicing of including short term debt, assuming that debt due within one year will have to be repaid in that year, by comparing the servicing commitment of debt reported by the BIS and that reported by the IBRD. It may be argued that short term debt will be rolled over at maturity but this is by no means certain and, if confidence wanes, such renewal of debt will become unlikely.

Table 5.13 Impact of short term debt upon total debt service

Debt to banks reported by BIS	1978	1981
Total debt to banks[1]	155.3	326.7
% of total debt due within 1 year	46.3	49.8
∴ Total debt due within 1 year	71.9	162.7
Interest burden on debt due (assumed to be average rate for 1 year ie 10% for 1978, 16% for 1981)	15.5	52.27
∴ Total servicing cost of all bank debt	87.4	214.97
Debt to financial markets reported by IBRD		
Amortization due to financial markets[2]	13.85	17.57
Interest due on such debt[2]	6.29	20.96
Total debt service medium term debt only[2]	20.14	38.53

[1] BIS Maturity Distribution of International Bank Lending July 1983
[2] IBRD World Debt Tables 1882/83

These figures show the magnitude of the shortcomings of analysing only medium term debt. Adding short term debt and a notional figure for interest (taken here as averaged LIBOR for the year in question) on that debt has increased the debt service burden by over fourfold for 1978 and by over fivefold in 1981. Even if we take the view that the debt will be rolled over, the interest on that debt more than doubles the interest servicing costs of total debt.

These figures will not be totally accurate because of different country coverage and because we do not know the actual interest bill on the short term debt. However, they do give some indication of the importance of including short term bank debt in the servicing costs of total bank debt.

5.7 The net transfer of funds

The concept of the net transfer is used by some analysts to measure the net flow of resources from medium and long term international lending. Figures produced by the IBRD of the net transfer omit short term debt. However, changes in the short term debt from year to year will influence this net transfer. In particular, if short term debt decreases over time, the net transfer will be less than that suggested by the IBRD figures and if short term debt rises, the net transfer will be higher than the IBRD figures suggest.

Yet again total cash flow in relation to a country's debt should be considered. When that cash flow becomes negative, the borrower is repaying more than it is receiving in each time period. Given the scarcity of external financial resources to some developing countries, and that a negative cash flow in relation to external debt makes that scarcity greater, the borrower may consider repudiating the debt.

For such a policy to be rational, the borrower must be certain that there will be no further need for external finance and, in the case of bank finance, no further need for the banks' services generally. Given

the continuous need for development finance, balance of payments finance and the need for banking services associated with international trade, it would not be rational for borrowers to repudiate bank debt.

As the following figures show, some of the major debtor countries have experienced negative net transfer in recent years. Indeed, it was shown in chapter one that the poorer developing countries have a continuous negative net transfer in relation to bond issues. Yet they do not repudiate those issues because it would reduce their chances of gaining private and official finance in the future.

Table 5.14

Net transfer from financial markets

	1971	1973	1975	1976	1977	1978	1979	1980
Latin America								
Argentina	181.2	46.9	-304.8	1113.7	76.3	394.3	1456.1	1078.2
Brazil	367.4	977.2	1770.4	2399.6	2513.1	5376.4	2845.1	-1009.0
Chile	-8.5	56.9	-27.2	-2.9	342.5	654.7	618.9	-152.3
Colombia	4.6	100.8	82.5	-12.8	100.6	-45.1	390.8	426.6
Ecuador	-2.3	4.5	77.0	84.7	417.7	247.8	286.9	216.1
Mexico	104.7	1110.3	2262.9	3204.7	3117.3	2418.3	789.9	335.2
Venezuela	160.6	-31.1	-235.1	852.8	1792.2	2169.0	2544.8	221.5
Africa								
Algeria	87.9	1011.4	651.9	773.5	1125.2	2503.1	936.3	-69.7
Nigeria	-2.2	-7.9	-5.4	-14.3	-11.2	1171.9	1244.8	1011.9
Asia								
Indonesia	-0.2	200.0	1062.6	612.6	44.5	-266.3	-279.4	523.2
Korea S	106.2	47.2	382.8	314.1	422.8	667.8	1892.7	660
Philippines	-30.2	-59.1	86.5	476.0	369.8	432.5	622.5	583.0
Taiwan	NOT PART OF IBRD DRS							
Thailand	-0.2	-0.4	20.4	87.1	-13.7	335.1	433.0	230.1
Malaysia	89.7	-16.9	321.4	74.8	67.8	245.1	126.7	13.9

Figures: Millions US $

Source : IBRD World Debt Tables 1982/83

5.8 The degree of diversification in bank loan portfolios

The degree of concentration of bank loan portfolios was discussed on page 220 above. This section applies the mean-variance model of portfolio selection as developed by Markowitz (1952, 1959) and extended by Tobin (1958) and Sharpe (1964). The aim is to determine whether or not the banks do have fully diversified loan portfolios.

The mean-variance model aims to explain the selection of efficient portfolios. Efficiency is defined as not being able to increase the expected rate of return without increasing the risk or not being able to lower the risk without lowering the expected rate of return.

This model assumes that the characteristics of a portfolio can be summarised by two measures. One, the return on the portfolio, and the other, the risk attached to that portfolio. The rate of return is measured by the average expected return on each of the securities in the portfolio weighted by the proportion of each constituent security; the mean. The risk is measured by the square root of the variance; the standard deviation, of the probability distribution of the expected rates of return.

The expected return on the portfolio is therefore given as:

$$E(R\ port) = \sum_{i=1}^{N} WiRi$$

where: $E(R\ port)$ = expected return on portfolio

Wi = the proportion of security i in the total portfolio

Ri = the expected return on security i

Although the expected return on a portfolio is the weighted average of the expected return on each security, the risk of the portfolio cannot be measured by the weighted average of the standard deviations of each security. The reason is that, in measuring the risk of the portfolio, we are not only concerned with the variance of the returns but the degree in which the returns of individual securities

fluctuate together. Clearly therefore the degree of correlation between the variance of expected returns of pairs of assets is required. Markowitz therefore incorporated the covariance of returns between pairs of assets in the portfolio standard deviation as follows:

$$\sigma \text{ port} = \sqrt{\sum_{i=1}^{n} Wi^2 \, \sigma i^2 + 2 \sum_{i=1}^{n} \sum_{j=1}^{n} Wi \, Wj \, Covij}$$

where: σ port = the standard deviation of the portfolio

Wi^2 = the weights of the individual assets where these weights are the squared proportions of individual assets in the portfolio

σi^2 = the variance of asset i

Covij = the covariance between the expected returns for assets i and j

The importance of the correlation of the returns between pairs of assets can be explained by the fact that if the expected returns always moved together, there would be no benefit to be derived from diversification. Where the returns are perfectly positively correlated the standard deviation is the weighted average standard deviation of the individual assets. However, where the expected returns are less than perfectly correlated, the standard deviation of the portfolio will be less than the weighted average of the standard deviations of the individual assets. Moreover, the portfolio standard deviation declines as the degree of correlation declines so that the portfolio standard deviation is least when the expected returns on each pair of assets is perfectly negatively correlated.

Thus, effective diversification does not just mean adding assets to the portfolio, but adding assets whose returns are least correlated with the existing assets in the portfolio. This would be computationally onerous and Sharpe (op cit) reduced the computational requirements by comparing the correlation between individual assets and an index of all similar assets.

We can therefore see that if the riskiness of a security is less when that security is held in portfolio, that is that the riskiness of an individual security overstates the riskiness of holding that security in portfolio, then some of the individual security's risk can be removed by diversification. However, some part of that individual security's risk will remain as a factor in the overall portfolio risk. This implies that total risk comprises two parts: 1) that which can be diversified away (an unsystematic element), and 2) that which cannot be diversified away (a systematic element). The unsystematic risk is uncorrelated with the risks of the portfolio but the systematic risk is so correlated.

Thus, Total Risk = Systematic Risk + Unsystematic Risk. This classification will be used later to classify the risks associated with bank lending as those risks common to all loans and those risks which are loan specific.

The choice of efficient portfolio

To illustrate the choice of an efficient portfolio assume two securities whose returns are not perfectly correlated. If the relative combinations of each security are changed, a variety of portfolios is possible each with different security weightings but a constant degree of correlation between returns. A locus of the possible trade-offs between risk and return is depicted in figure 5.1.

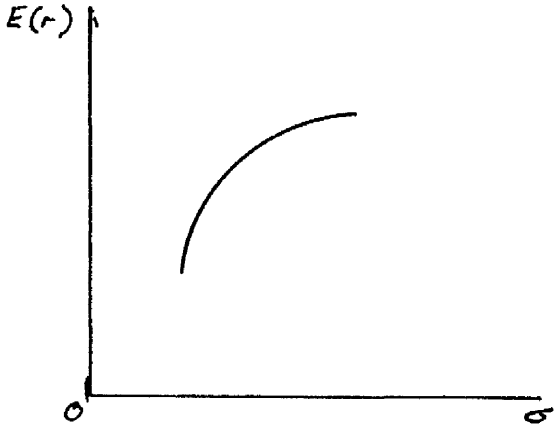


Figure 5.1 Efficient portfolios: two assets

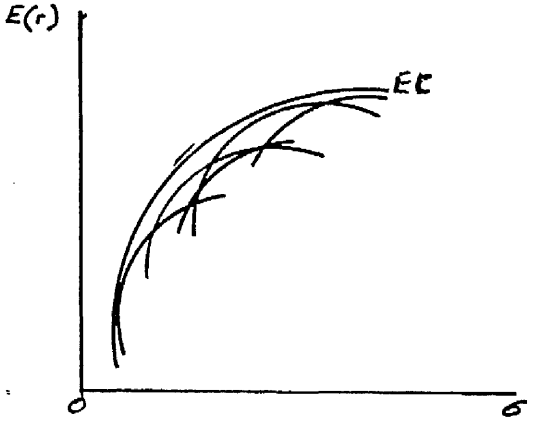


Fig 5.2 Efficient portfolios: many pairs of assets

If we carry out similar calculations for a variety of combinations of different pairs of assets, we get a series of plots as shown in figure 5.2. The envelope curve in figure 5.2 (EC) is the frontier of efficient portfolios.

The analysis above assumes that all assets are risky and that there is no facility to borrow. However, if a risk-free asset and borrowing at the risk-free rate are introduced, the efficient combination of portfolios becomes the straight line marked CML in figure 5.3 below.

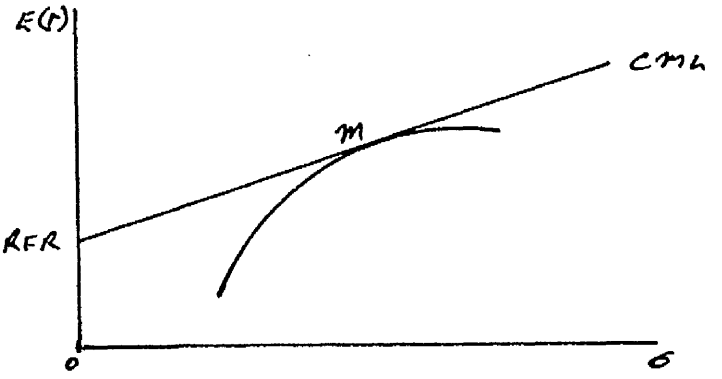


Figure 5.3 Choice of efficient portfolios with risk free asset and borrowing

Anywhere along the line between RFR and M investors will invest in combinations of the risk-free asset, usually considered to be a short term government bond, and the portfolio M. Beyond M investors borrow at the risk-free rate and invest in the risky portfolio M.

Anywhere along the line between RFR and M investors will allocate their wealth between the risk-free asset and the portfolio M depending upon the amount of risk they are willing to bear. Beyond M investors will be willing to borrow (assumed to be possible at the risk-free rate) and invest in multiples of the portfolio M, again depending upon the amount of risk they are willing to bear.

The actual choice of portfolio will depend not only upon what portfolios are efficient, but also upon the utility function of the investor. The bank investor is assumed to be risk averse and therefore like all risk averse investors requires more return to compensate for a greater risk (Tobin, op cit). There is therefore a utility function where

return enters positively and risk enters negatively. This function can be depicted by way of indifference curves as in figure 5.4 below:

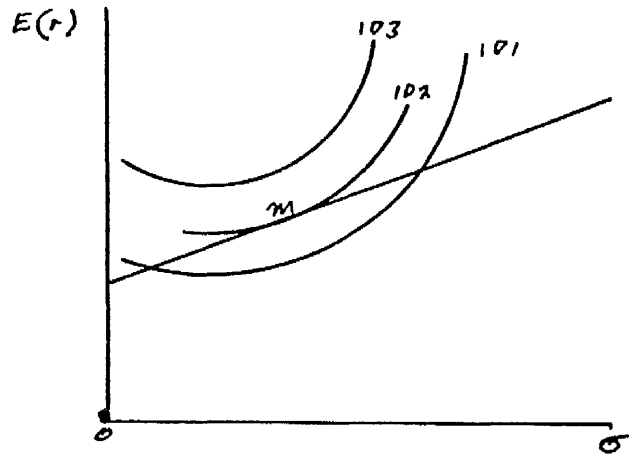


Figure 5.4 Choice of optimum portfolio

As each indifference curve exhibits constant utility and, assuming investors prefer more income to less income, ID3 will be a more desirable indifference curve to ID2 which in turn is superior to ID1. The optimum choice of portfolio is given by the tangency of the indifference curve and the efficiency frontier, depicted as point M in figure 5.4 above. This is the efficient portfolio that provides the highest utility.

This model assumes that the expected returns have a normal distribution or that the investors have a quadratic utility function. This is particularly important when applying this model to banks. This is because bank loans never yield more than contracted rate of return, therefore the distribution of expected returns must be skewed. We therefore have to assume a quadratic utility function for the banks.

Furthermore, this model assumes that investments are infinitely divisible and therefore diversification can proceed along a continuous choice of portfolios. However, in international banking, loans are large discrete investments and the secondary market in loan participations is very thin. Therefore, diversification of a loan portfolio proceeds in discrete jumps.

Moreover, the assumption that investors can both borrow and invest at the same (risk-free) rate of interest is unrealistic.

Figure 5.5 below shows the effect of being able to borrow at a rate, BR, above the risk-free rate while being able to invest in both risky and risk-free assets.

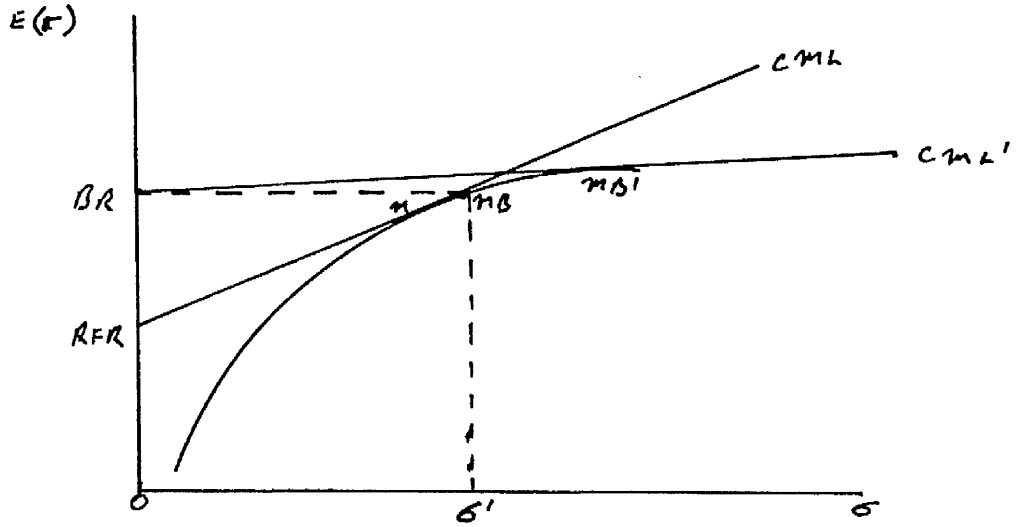


Figure 5.5 Choice of optimum portfolio with a different rate of interest for borrowing and lending

Owners of investable funds will be able to invest in combinations of RFR and M along the line RFR-M or individual portfolios of various mixes of securities between M and MB. Investors willing to borrow will have to invest in individual portfolios along the line MB to MB' or multiples of MB' between MB'and CML'.

A financial intermediary will only invest its borrowed funds to the right of MB because to invest in any of the portfolios between RFR and MB will result in losses as the cost of borrowed funds exceeds the rate of return on the portfolios.

Thus, financial intermediaries must invest borrowed funds in a portfolio exhibiting at least a degree of risk equal to σ' in figure 5.5 in order to earn a rate of return that covers the cost of funds.

Clearly the discontinuity of CML' without additional constraints upon the indifference map of the investor creates methodological problems for this model which are beyond the scope of this thesis to solve. Nevertheless, this model does show the usefulness to banks of developing a portfolio of loans, the expected returns of which are uncorrelated.

Therefore, a more useful aspect of this model is the division of risk into systematic and unsystematic risk. Thus, if a banker is able to identify the unsystematic risks in his loan portfolio, the banker will be able to reduce the overall risk of his portfolio by taking on loans where the unsystematic risk has a low correlation with such risks in the existing loan portfolio.

Unfortunately, lack of data does not allow the variance of returns, which is in any case likely to be skewed as noted above, to be measured. It should, however, be possible to isolate causes of risk that are common to a whole portfolio of loans and those causes which are not necessarily common to the whole portfolio. This section therefore proceeds to determine those causes of risk that are common to the whole portfolio. It then analyses the extent to which causes of risk that are not common to the whole portfolio are in fact common to many of the loans in that portfolio. Thus, if we find that many loans share these common causes of risk, which need not be common to the whole portfolio, we will conclude that the banks have not sufficiently diversified their portfolios.

The data for this analysis is that relating to external claims of banks in the BIS reporting area. The analysis makes the assumption that each country has borrowed on one loan equal to the total outstanding to the banks. We are therefore only determining the degree of diversification in respect to country risk. In reality some of the loans will be to private borrowers; we therefore implicitly assume that sub-portfolio of loans within a particular country is adequately diversified. This assumption must be made in this study because of data limitations. However, it is considered by the writer to be an area where

further research would be very beneficial both to the banks and the regulatory authorities.

Causes of risk common to all loans

The most notable cause of systematic risk on euroloans is the system of linking interest costs to fluctuations in LIBOR or a similar reference rate. Thus, where money market conditions in the major financial centres cause rates of interest to rise, all eurocurrency loans in a particular currency will respond accordingly. Given that unanticipated increases in debt servicing costs increase the risk of default, the linking of loans to a common fluctuating interest rate is a source of systematic risk.

Another source of systematic risk will result from exchange rate fluctuations. To the extent that most loans are denominated in US dollars and the trade weighted exchange rate of the dollar rises, the servicing costs of the loan rise, ceteris paribus. However, the borrowing countries' dollar export earning may also rise; this is discussed in more detail below.

A third cause of systematic risk is that in order to earn external funds for servicing the debt, export sales are required. Therefore, to the extent that a world recession reduces international trade globally, there will be a systematic element of risk as all borrowers will experience a deterioration of their export earnings.

Influences upon unsystematic risk

At the country level the most notable influences are the country specific sources of export revenue. To determine to what extent diversification is providing uncorrelated sources of export revenue between countries, it is necessary to analyse the export markets of each debtor country and the commodities that constitute its exports.

Although sources of export revenues could be country specific,

evidence from appendices IV to VI suggests that there are some common elements. To the extent that export revenues of the borrowers are dependent upon common sources, they will represent a less than fully diversified element of unsystematic risk.

All the data for the appendices IV to VI were extracted from the United Nations Year Book 1979-80. Appendix IV shows the proportions of primary product exports and secondary product exports as a proportion of the total exports of the fifteen major borrowers. If Korea is excluded because primary products account for only 10.7% of its exports, the average proportion is 76.1%. Thus, this group of borrowers depend heavily on the export of primary products, the demand for which generally has a lower price and income elasticity of demand than manufactured goods or services. Therefore, these countries would be particularly vulnerable to changes in the level of the economic activity of their trading partners.

Appendix V shows the degree of concentration of the export markets of these major borrowers. On average 62% of these borrowers' export markets were accounted for by only five countries. Moreover, the USA was a major market for all these borrowers, accounting for an average of 36% of each borrower's total export market and other OECD countries provided dominant export markets for all the borrowers except for Ecuador. Clearly a portfolio of loans to these major borrowers would be exposed to unsystematic risk because of the lack of diversification of the export markets.

Appendix VI shows (by SITC code) the commodities exported by each of the major borrowers where the amounts exported account for more than 10% of the borrower's export or 10% of world exports. The number of types of commodities exported by each borrower is also given. Although the group as a whole has 20 products in this export category, there are considerable degrees of concentration amongst Mexico, Venezuela, Algeria, Indonesia, Ecuador, all oil exporters and Chile (copper) and

Colombia (coffee). What is more, no country had more than 20 export product groups and the average was 11.

It has been suggested (Evans 1968) that a portfolio of 20 securities is adequately diversified when the securities are included in the portfolio in equal proportions. With unequal proportions as found in a bank's loan portfolio, a greater number of investments is required to get the full benefits of diversification. This could be extended to the diversification of the sources of export revenue. Accordingly, from the information provided by appendix VI, the sources of export earnings are not sufficiently diversified. Therefore the sources of the means of repayment are not sufficiently diversified and it must be concluded that the banks have not sufficiently diversified this aspect of their loan risks.

However, it should be emphasised that these conclusions are tentative because, to determine the full effect of loan diversification on the banks' portfolio risk, a covariance matrix of all loans would have to be drawn up. This requires a considerable computational effort which is beyond the scope of this thesis. The establishment of such a matrix by bank management would not only establish the level of risk of the portfolio but also indicate the impact upon portfolio risk of extending new loans to various borrowers. This would be very valuable management information and should be the subject of further research.

Furthermore, these conclusions are only valid if the banks treat a portfolio of loans to developing countries as separate from other portfolios of assets. There are reasons for believing that loans to developing countries do constitute a separate portfolio in that the degree of risk due to informational inadequacies differentiates such loans from loans to OECD based borrowers. As such it is beneficial for the banks to achieve maximum diversification of that portfolio.

5.9 Maturity transformation

One reason why commercial banks are able to recycle funds from surplus sectors of the world economy to the deficit sectors is that they are willing to bear the risks associated with maturity transformation.

It is therefore argued that the greater the degree of maturity transformation, the greater is the risk of bank failure if large depositors wish to withdraw their funds. Indeed the increasing degree of maturity transformation may engender such reduced confidence as to initiate such a withdrawal. The risks to the banking system are therefore closely intertwined with those associated with concentration of depositors.

There has been some debate about measuring the degree of maturity transformation by way of ratios (Ashby 1973, 1982) or by absolute amounts (Duncan 1981). Here we cut across that debate by showing both ratios and absolute amounts. Absolute amounts become more important as inflation increases the amounts transformed in relation to the capital base of the banking system.

The following figures show the net liabilities (-) or net assets (+) of UK banks at three dates, end of December 1973, and 1978, and 18 November 1981.

Table 5.15 Maturity distribution of net assets or net liabilities of UK banks

Maturity	1973	%	1978	%	18.11.81	%
Less than 8 days	-2073	-5.1	-13696	-4.9	-24055	-4.3
8 days to less than 1 mth	-308	-0.7	-9971	-3.6	-19351	-3.5
1 mth to less than 3 mths	-658	-1.6	-15779	-5.7	-33867	-6.1
3 " " " 6 "	-11	-0.03	-8752	-3.1	-16810	-3.0
6 " " " 1 yr	-306	-0.7	-314	-0.1	-1787	-0.3
1 yr " " 3 "	+1162	+2.9	+13458	+4.8	+20201	+3.6
3 years and over	+2304	+5.7	+35453	+12.7	+66042	+11.8

Quantities: millions US $
Source: calculated from BEQB March 1974, p44, March 1979 Table 13 and September 1982 Table 14.2

Firstly, taking the absolute amount of mismatch in each maturity, the amounts of excess liabilities over assets in the shorter maturity bands has grown much faster than, say, the capital funds of the banks. However, this growth has been during a time when the interbank market has grown considerably in depth.

Looking at the percentage columns which show the percentage of each net position to total claims, there does appear to be an increase in the degree of maturity transformation between 1973 and 1978. The figures for 1981, however, show that the degree of transformation has been fairly stable (it has actually declined slightly). This would support the suggestion that the bankers went through a learning process with regard to financial intermediation between 1973 and 1978 and subsequently have consolidated that learning; indeed, the situation in November 1981 was slightly improved since December 1978. Thus the degree of risk to the UK banks at least has been stable since the time of the second oil shock. Unfortunately data showing the degree of maturity transformation of the whole eurocurrency market or even of banks within the BIS reporting area is not publicly available. Therefore comparison of the London market with the whole market cannot be made in this respect.

While the degree of maturity transformation for the market as a whole is an indication of the transformation risk which that market runs, the same cannot be said for the figures of individual banks. The reason for this is the deep interbank market which now exists. This market enables funds to pass through several banks between the initial non-bank depositor and final non-bank user. As a result the degree of maturity transformation for any individual bank will be less than that of the market as a whole.

Unfortunately, data are not available that allow the changes in the degree of maturity transformation due specifically to lending to developing countries to be determined. However, the writer has no reason to believe that this lending has had a significant influence on the degree of maturity transformation.

Table 5.16

Maturity distribution of assets of reporting banks* vis-a-vis countries outside their own area, mid-1978 to mid-1983

Positions vis-a-vis		Maturity distribution of assets: up to and incl one year	over one year up to and incl two years	over two years	unallocated
		in percentage of total assets			
I. Developed countries outside the reporting area	mid-1978	42.7	11.0	35.1	11.2
	mid-1982	42.3	6.6	42.6	8.5
	end-1982	42.2	6.6	42.8	8.4
	mid-1983	41.9	6.7	43.1	8.3
III. Developing countries (including OPEC)	mid-1978	46.3	10.4	34.7	8.6
	mid-1982	50.0	7.3	35.4	7.3
	end-1982	49.4	6.1	36.2	8.3
	mid-1983	48.4	6.3	36.9	8.4
1. Latin America	mid-1978	41.0	12.5	40.8	5.7
	mid-1982	47.0	8.2	39.6	5.2
	end-1982	46.1	6.7	41.2	6.0
	mid-1983	45.5	6.7	41.6	6.2
2. Middle East	mid-1978	67.3	6.2	22.3	4.2
	mid-1982	80.0	4.3	10.8	4.9
	end-1982	79.5	3.8	10.7	6.0
	mid-1983	78.0	4.8	10.6	6.6
3. Other Africa	mid-1978	30.3	9.6	32.9	27.2
	mid-1982	30.0	7.1	33.9	29.0
	end-1982	30.8	6.9	32.2	30.1
	mid-1983	30.7	7.2	32.6	29.5
4. Other Asia	mid-1978	52.8	9.0	29.2	9.0
	mid-1982	51.5	6.4	37.5	4.6
	end-1982	51.4	5.2	37.6	5.8
	mid-1983	49.5	5.5	39.0	6.0
Total outside area (I., II., & III.)	mid-1978	45.3	10.6	34.1	10.0
	mid-1982	47.3	7.4	36.8	8.5
	end-1982	46.7	6.6	37.6	9.1
	mid-1983	46.0	6.8	38.2	9.0

*Banks in group o
ten countries,
Switzerland,
Austria, Denmark
& Ireland are
certain of their
foreign affiliat

Source: Bank for International Settlements
The Maturity Distribution of International Bank Lending December 1983

5.10 The maturity profile of developing country debt

Although the degree of maturity transformation in the eurocurrency market stabilised between 1978 and 1981, the movement in the maturity profile of the debt towards the short term (up to one year) continued until mid 1982. The figures in table 5.16 summarise the trend between mid 1978 to mid 1983 for various geographical distributions of borrowers. The main exception to the trend is 'Other Asia' where the trend has been steadily declining. These figures also show the regional differences in the proportion of short term debt. For the Middle East short term debt has accounted for as much as 80% of total debt, while for Other Africa the comparative figure is 30%.

These summary figures obscure substantial differences between countries within regions. For example, within Latin America in 1982 Brazil and Mexico had 60% or more of total debt due within one year whereas Chile had around 11% and Colombia as little as 6%. For Other Africa in 1983 Nigeria had 39% of its debt due within one year whereas Algeria had only 17% of such debt due. For Other Asia in 1983 Indonesia had 35% of its debt due within one year while the Philippines had nearly 60% of such debt due.

This trend is caused both by existing debt nearing maturity and by increasing amounts of new debt being negotiated with short maturities. This latter trend is the most worrying in terms of development finance because of the added servicing burden in the current financial period. BIS (1982) report that over 66% of new money going to Latin America in the second half of 1981 had a maturity of less than one year and that other geographical regions were experiencing similar maturity profiles on new debt.

Figures below give the maturity profile of external debt of the UK banks as at June 1982. As is to be expected they also show the bunching of maturities at the short end of the spectrum but they also highlight how much debt was due within six months of that date.

Table 3.17 The maturity profile of external debt of the UK banks, June 1982

Summary: foreign currencies

	Claims									
	Total	Less than 6 mths	%	6 mths to less than 1 year	%	1 yr to less than 2 years	2 yrs to less than 3 years	3 yrs to less than 5 years	5 years and over	Unanalysed (b)
Western Europe (d)	28,268	10,460	37.0	1,652	5.8	1,595	1,791	3,841	7,366	1,563
Eastern Europe	13,169	4,666	35.4	1,281	9.7	1,388	1,665	2,290	1,682	197
Australia, New Zealand & South Africa	9.365	4,207	44.9	428	4.6	477	498	1,035	2,143	577
Major oil exporting countries	23,059	15,041	65.2	1,419	6.1	1,062	1,167	1,590	2,327	453
Non oil developing countries (e)	47,675	16,436	34.47	3,335	7.0	3,666	3,336	7,159	12,062	1,681
Of which:										
Middle East & North Africa	4,176	2,650	63.45	349	8.3	357	180	347	229	64
Other Africa	2,369	852	36.0	173	7.3	197	215	310	556	66
Asia	9,494	4,952	52	581	6.1	474	453	897	1,871	266
Latin America & Caribbean	31,572	7,965	25.0	2,232	7.0	2,367	2,488	5,602	9,365	1,283
Other	64	17	27.0	-		1	-	3	41	2
Total	121,536	50,810		8,115		8,188	8,457	15,915	25,580	4,471
Offshore banking centres	61,483	50,353		2,954		1,956	1,223	1,936	2,287	774
Total	183,019	101,163		11,069		10,144	9,680	17,851	27,867	5,245

Value: $ millions
Source: Bank of England Quarterly Bulletin, December 1982

Again this summary obscures extremes within regions. In Asia as at June 1982 the Philippines had 73.4% of its debt to UK banks due within six months whereas Indonesia had only 17% of its debt so due. In Latin America Brazil had 15% of its debt due within six months but Mexico had 33%, Argentina 34% and Venezuela had 37% of their debt so due.

It should be noted that generally there are unused credit facilities available to borrowers. However, there is an unknown proportion of these facilities which is informal and revocable. Therefore some of these facilities can be withdrawn at short notice. Because of this, unused credit facilities have not been included in this analysis.

Whereas chapter one, page 56 shows that average maturities of medium term bank debt increased during the 1970's, making such finance more suitable for development purposes, the impending maturity of some debt and the increasing use of short term debt is threatening the debt servicing ability of the borrowers.

The question of the maturity structure of a loan portfolio is associated with the diversifiable element of risk. To the extent that factors which hinder the making of debt amortization payments occur at intervals over time, a well-diversified maturity structure will reduce portfolio risk. As such there is prima facie evidence that bank loan portfolios to developing countries are inadequately diversified in this respect.

Unless the banks and the borrowers take a more realistic view of debt management by the borrowers, the successive debt crises will erode depositor confidence to the detriment of all the parties concerned. The problems of restructuring external debt are discussed in detail in the following chapter.

5.11 Conclusions

From the above analysis, the writer draws the following conclusions about the impact of increased bank lending to developing countries upon the banks themselves:

1) It is not possible to determine whether the growth of bank debt has been excessive without detailed analysis of each of the borrowers.

2) The debt service burden has increased because of higher interest rates, increasing use of floating rate debt, and shorter maturities on new debt. The real maturity of floating rate debt has been shortened by inflation.

3) Lending by UK banks has grown much faster than their capital base. If this fact reflects the position of all banks in the eurocurrency market, this will constitute a potential constraint on future lending. However, to the extent that the market has experienced an almost continuous influx of new lenders, any continuation of this trend will partly relieve this constraint. The continuation of this influx will depend upon profitability and financial stability in these markets. It is therefore crucial that the regulatory authorities place no artificial constraints upon profitability and that the authorities strive for financial stability in these markets if future financial flows are to be guaranteed.

4) To the extent that growth of loans to developing countries has been a stable proportion of total loans over the last five years, the capital constraint is as likely to apply to all external lending including OECD business. This implies growing competition between OECD based borrowers and LDC borrowers for refinancing facilities.

5) The degree of concentration of loans to the 15 major borrowers, the elements of systematic risk in their total loan portfolios and the lack of diversification of unsystematic risk in the developing country loan portfolios suggest that the banks should pay more attention to portfolio diversification.

6) The impact of borrower concentration and lack of portfolio diversification is exacerbated by the concentration (bunching) of maturities in the very near future. This problem must be overcome by a realistic policy towards the restructuring of the maturity profile of developing country debt.

Chapter 6

INCREASING THE ACCESS OF DEVELOPING COUNTRIES TO THE PRIVATE FINANCIAL MARKETS

6.1 Introduction

Chapter five noted that total bank debt of LDCs rose faster than their collective GNP and exports. Moreover, the debt servicing burden rose, particularly at the end of the 1970's, because of the temporal rise in interest rates, the movement towards floating rate loans and the movement towards shorter maturities. For UK registered banks, at least, there was a tendency towards greater concentration of loans and lower capital to asset ratios.

These various factors may be seen as constraints upon further bank lending to LDCs either because they increase the bankers' perceived risk or because institutional constraints impinge upon the bankers' behaviour.

Factors that will potentially restrict the flow of new private credit to the developing countries can be classified into two groups.

The first group of factors consists of those that increase the lending bankers' perception of the risk of default. These include:

a) high real rates of interest

b) recession in the export markets for LDC products

c) increased LDC imports

d) poor economic management including debt management

e) political and social instability

The second group of factors consists of those that impede the process of international financial intermediation. These include:

f) the impact of borrower default upon bank balance sheets

g) liquidity crises and loss of depositor confidence

h) capital adequacy

i) the impact of foreign exchange crises upon bank balance sheets

j) profitability

Clearly, many of those factors that contribute to the bankers' perception of the risk of default are largely outside the control of the international banking system itself. Therefore, as this thesis is concerned with the role of financial institutions in providing external finance, such factors will generally not be analysed in detail, although something will be said about interest rates and debt management policy.

Those factors which potentially impede the process of financial intermediation are to a greater extent under the control of the financial institutions, albeit the official ones. This section of the thesis, therefore, analyses various ways in which the bankers and the official financial institutions may:

a) reduce the bankers' perceived risk of default by developing country borrowers

b) mitigate the impediments to international financial intermediation.

It should not be thought that risk of default only applies to developing country borrowers. With the high nominal interest rates of recent years, much corporate borrowing in the industrialised economies has been via bank lending. Thus, a major default by an unsecured corporate borrower would have a similar impact upon the banking system as a similar sized default by a sovereign borrower.

Therefore, increased access of the developing countries to private financial markets requires policies that reduce not only the actual and perceived risks of lending to those countries in particular, but also reduce those risks which are associated with international banking generally.

This chapter first discusses the risks associated with international bank lending and then analyses six suggestions for reducing the banker's perceived risk of lending to developing countries in particular, and then three suggestions for reducing the risks of international financial intermediation generally. These nine suggestions are the result of an

extensive search, by the writer, of the relevant literature.

The results of a survey conducted by the writer amongst two hundred banks in London regarding their attitudes to these suggestions are reported and analysed in chapter seven. This survey was conducted because unless the lending bankers accepted that the above nine suggestions would reduce the risks involved, increased access to the private markets by developing countries would not be achieved.

6.2 The risks associated with international bank lending

There have been considerable developments in the realms of banks' techniques of country risk analysis. The term 'country risk analysis' was used in much of the literature to describe a technique for determining whether a country could meet its private and public commitments on external debt. However, much of the literature fails to differentiate the type of risks associated with lending to different types of borrowers in a particular country. Furthermore, it is felt that the term 'country risk' is used in too wide a sense. The definitions given below of the types of risk involved may not be in agreement with those used in the literature but, being tighter definitions, classify the risks in a more meaningful way.

Sovereign risk

This risk is incurred when lending to a sovereign borrower who does not relinquish his right to sovereign immunity. Thus, this risk entails the inability to enforce the terms of the loan agreement. To the extent that the terms of the loan are unenforceable, the banks suffer sovereign risk. This risk will hold for any loan to a sovereign borrower or one guaranteed, or in some other way secured, by a sovereign power. In effect sovereign risk is the risk of repudiation. I have chosen to differentiate sovereign risk from country risk because sovereign risk relates to the

purposeful act of repudiation which only a sovereign can do with some degree of impunity. This impunity is not however total, for one sanction held by the international financial community is to withhold future credit (see page 277 below). Clearly outright repudiation is only likely if the borrowing sovereign power is planning to change its political allegiances.

Country risk

This risk relates to a country not having sufficient foreign exchange resources to meet its commitments on its external credits. The cause may be political or economic and it may lead to default. However the difference between country risk and sovereign risk is that country risk defaults are not so clearly intentional and indeed may not be intentional at all. Political causes may include wars or civil unrest. The economic causes may, among others, be insufficient savings or the inability to convert domestic savings into foreign exchange.

Country risk can affect loans both to public and to private borrowers. Private borrowers are affected to the extent that they do not have private control over sufficient foreign exchange resources to service their debts and have to rely upon the adequacy of national stocks of reserves. In such cases the private borrower competes with the public borrower for foreign exchange reserves. If the nation is short of reserves the private debtor cannot service his external debt despite his domestic finances being sound.

Credit risk

This risk relates to a private borrower failing to generate sufficient financial resources to service the loan. In the extreme, this may lead to the bankruptcy of personal borrowers and the liquidation of corporate borrowers. In either case the duty to repay is extinguished by the courts in whose jurisdiction the bankruptcy or liquidation is

determined.

Thus credit risk may lead to default because the borrower cannot obtain sufficient foreign exchange even though the nation had excess reserves. Clearly credit risk is incurred in lending to borrowers in any country.

The important point that differentiates credit risk of a private borrower and country risk of a sovereign borrower is that default under credit risk may result in extinguishing the responsibility to repay, and therefore the bankers' asset - the debt - is also extinguished. The same does not happen for a sovereign loan if the sovereign has insufficient resources because the sovereign's existence and debts are not extinguishable in the courts. Default may occur but the debt does not cease to exist. Only if the sovereign borrower repudiates its liability is the bankers' asset de facto extinguished.

Project risk

This risk in its pure form only relates to lending which is entirely dependent upon the project for repayment. In pure non-recourse project lending the lenders have no recourse to the borrowers (Shaw et al 1980). It was pointed out in an earlier description of project finance that there are pre-completion and post-completion risks (ref page 91 above). These risks apply equally to loans to the public and the private sectors. The extent to which project risk dominates the risk attached to a loan depends upon the terms of the loan agreement. For example, if the loan agreement allows for repayments to be guaranteed by a corporation, then credit risk will also be involved.

Portfolio risk

There are four elements to portfolio risk:-

a) risk due to concentration of lending or deposits

b) liquidity risk

c) currency risk

d) interest rate risk (Shaw et al 1980)

Risk due to concentration of lending operates at two levels. One, that of the individual bank which has an excessive exposure to one country. The second, excessive exposure of the whole market to a particular country. At both levels the greater the degree of concentration, the greater the risk to the bank because the benefits of diversification are reduced.

It should be noted in this respect that although banks may have an adequate degree of diversification over, say, a number of private and parastatal borrowers of one country, those borrowers are effectively concentrated into one in terms of country risk.

Concentration of deposits does not hold quite the same risks to the banks because even if one set of national depositors withdrew their funds from the euromarkets, it is unlikely that these funds would be lost to that market completely because of the existence of the interbank market. Through this interbank market the banks that lost deposits would be able to attract them back. Only if the depositor held the withdrawn proceeds of the deposit in cash or paid it to the central bank issuing the currency of the deposit would that deposit be lost completely to the banking system. Nevertheless a well-diversified deposit base will add stability to the banks' funding operation.

Liquidity risk, currency risk and interest rate risk

All three of these risks are associated with the mismatch between assets and liabilities. Liquidity risk is associated with the degree of maturity mismatch; currency risk is associated with the currency mismatch between total assets and total liabilities ie foreign exchange exposure; and interest rate risk is associated with the mismatch between the maturity of deposits and the roll-over periods on loans.

Clearly all three types of risk can be reduced by reducing the degree of mismatch.

6.3 Reducing the actual or perceived risk of lending to developing countries

Of the risks discussed above, four, sovereign, country, credit and project risks result from the uncertain outcome of the borrower's behaviour during the term of the loan. The component risks of portfolio risk result from the uncertainty regarding the banker's behaviour during the term of the loan. In particular, the environment within which the process of financial intermediation takes place is uncertain and therefore the banker's behavioural reaction to that environment is uncertain.

Therefore, the proposals for reducing the risks to the lending banker are divided into two groups. The first group aims to reduce the risk to the banker by making the outcome for the bank of the borrower's behaviour more certain. These proposals are:

1) Reducing the interest element of the debt service burden; in particular a new facility from the IMF to help LDC borrowers to spread the impact of upward variations in floating rates of interest during the term of the loan.
2) A formal procedure for debt rescheduling and advisory facilities for the banks and the LDCs in debt management policy so that debt can be rescheduled to make the debt profile more appropriate to the developmental and adjustment needs of the borrowers.
3) Improved information flow with the help of the IMF and IBRD to assist the LDCs in debt management policy and to the banks to enable improvements in the quality of risk analysis.
4) Co-financing with IMF, IBRD and other official institutions.
5) Bank credit insurance and loan guarantees.
6) A secondary market in syndicated loans and the use of floating spreads in the pricing of loans.

The second group of proposals is aimed at ensuring that the environment within which the banks carry out the process of financial intermediation is at least fully understood by the bankers. These proposals are:

7) Improved prudential supervision and regulation by banking authorities so as to ensure that all banks have acceptable levels of foreign exchange exposure, liquidity, capital, credit exposure, and high quality management. The regulatory authorities by gaining a global view of the markets will be able to advise individual banks when they are not adequately diversified or are out of line with market trends.

8) International lender of last resort.

9) Bank deposit insurance schemes.

6.4 Reducing the interest element of the debt service burden

A recent paper (Williams 1982) suggested that for every 1% increase in LIBOR, the cost of servicing the interest payments on LDC debt rose by $2 billion. Although many LDCs also benefit from increased interest income on their holdings of foreign exchange reserves, clearly increased money market interest rates put at risk the debt servicing capacity of the developing countries. The impact of the rise in interest rates is not uniform amongst developing country borrowers. Those countries with the highest proportions of their external debt in the form of floating rate debt have been hit hardest. This is because all floating rate debt and not just new loans attract the higher rates of interest. It has been shown in chapter one of this thesis that only the richer developing countries have access to bank finance. Therefore it is these countries that have suffered most from rising interest rates; the poorer countries being sheltered by their reliance on official subsidised credit.

It is shown later in this chapter (page 272) that the receipt of

interest payments on loans is of more crucial importance than repayment of principal. Provided that the banks' assets earn sufficient income to ensure adequate profits and cover the cost of attracting deposits, repayment of loan principal is not essential for the continuous operation of a eurobanking financial intermediary. Furthermore, the lower the interest payments, ceteris paribus, the lower will be the risk of default. Clearly then any measure that reduces the interest costs to LDC borrowers must lower the risk of default, and any measures that increase the certainty of interest receipts must increase the attractiveness of LDC debt for the banker.

A number of suggestions have been made to reduce the interest burden to developing country borrowers. These include subsidising interest costs, guaranteeing interest payments and indexing interest payments. Alternatively, the writer suggests that a facility should be made available by the IMF specifically to finance upward fluctuations in interest costs of loans.

Direct subsidy of the interest costs of loans by, say, OECD governments as a form of aid may distort the use of capital causing relatively unproductive projects to be financed. Moreover, it may permit weak management of projects resulting in a lower rate of return, where tighter management could have produced a higher rate of return.

One way of extending access to the poorer developing countries would be to combine a guarantee of interest payments and a subsidy of interest payments on bank loans to these countries. This could be achieved by making the subsidy payments direct to the lending banks.

The criticism that relatively unproductive investments are financed with subsidised funds can be overcome by ensuring that the subsidy does not make the subsidised bank loans cheaper than the IMF or IDA loans. Thus, if the bank loans are say 2% above IMF/IDA money for similar uses respectively and subject to conditionality, the efficiency of the investment should be maintained. The exact degree of subsidy that is

possible will depend upon the returns from the investment to be financed. However it is not necessary that the subsidy be based upon market rates because the average cost of funds to the banks may be a suitable rate to be subsidised.

One problem with this system is that many bank loans are at floating rates thus there will be an open-ended liability for the subsidising agency.

Guarantees may make the bankers less prudent in their lending to LDCs. Consequently, should the guarantees not be continued, the banks would be left with a poor quality portfolio. This weakness could be overcome by guaranteeing only a proportion of the current interest costs in excess of those effective at the time of signing the loan agreement.

Recently the suggestion of indexing the interest costs or the principal has been commented on (Amexbank 1981, Nowzad 1982, Financial Times 1982). Under an indexed system borrowers would be charged a constant real rate of interest and the principal would be increased in line with an agreed index eg retail prices in the creditor's country.

For financial intermediaries such a system would only operate successfully if the banks could index their liabilities. Otherwise financial losses would ensue in each time period as the interest rates on deposits (including compensation for inflation) would be above that of loans. Moreover, paying a fixed real rate of interest may not benefit the borrowers. Taking the last decade as an example, real rates of interest have often been close to zero and even negative.

Given the need to change fiscal systems and the attitudes of depositors, together with the benefits borrowers have enjoyed in the past of negative real rates of interest, this writer does not consider the indexation of bank loans to be a viable solution to the problems of developing country borrowers in the near future.

It is suggested here, however, that the burden of rising interest rates could be eased if the developing country borrowers had access to

short term official finance to cover increases in interest rates that caused balance of payments difficulties. Such a facility would stabilise the influence of interest payments upon cash flow over successive time periods.

A scheme whereby a multilateral official agency provides such accommodation is in line with some facilities available from the IMF but for other causes of balance of payments problems eg deficiencies in export earnings and increased costs of cereal imports.

The aim of such a scheme would be to enable LDCs to meet the higher debt service costs caused by upward movements in LIBOR and using periods when LIBOR falls to provide resources to repay the facility to the multilateral organisation. The use of temporary facilities of this nature seems well suited to a period of increasing volatility of short term interest rates as was experienced during the 1970's. Given the volatile nature of interest rates, periods when debtors borrowed from this proposed facility would be followed by periods when rates were falling and debtors repaid that facility.

The period for which each amount of assistance would be made available should be related to the financial circumstances of the borrower and expectations of the future trend in interest rates.

This facility would have to be combined with some degree of conditionality associated with debt management policy. In particular the attitude towards debt rescheduling, the mix of long and short term debt, as well as future borrowing aspirations would have to be agreed before this facility is made available. This conditionality is necessary otherwise some borrowers may see advantages in excessive borrowing when interest rates are low and effectively capitalising some of the increased servicing costs. However, this capitalisation will be relatively short term and therefore yet another crisis will ensue when the capitalisation has to be repaid.

An additional spin-off would be improved quality of information

flowing to the banks. One condition of the facility should be that information flowing to the IMF relating to debt and debt management including the terms of conditionality, would be passed on to the lending bankers. This in itself would reduce the uncertainty associated with lending to LDCs (ref page 287 below). The discipline upon the LDC government having to monitor its debt more efficiently to benefit from this facility would improve the quality of information flowing to the LDC government itself with its attendant benefits for policy formulation.

For countries to be eligible for this facility it would be necessary for them to show that they:

a) have balance of payments difficulties due to the increased interest charges on external debt. This ensures that facilities to cover interest charges do not release resources for non essential imports.

b) that these increased interest charges are due to increases in the levels of interest rates on that debt and not the increased size of that debt.

c) the balance of payments problems are making it difficult for the debtor to service its debt and maintain previously agreed economic growth objectives.

The amount of assistance to be given would be calculated quarterly on a loan by loan basis. Unless current interest rates were at an all-time peak or new loans have not been negotiated for some time, some loans would be attracting rates of interest below those that applied at the time of negotiation. The interest savings on these loans would be offset against the assistance paid on account of other loans.

In order to gauge bankers' opinions about this suggestion and other points made in this section, four questions (numbers 6-9) were included in the survey. The results are reported fully in chapter seven, page 338 below.

6.5 Restructuring Debt

If a borrower has difficulty servicing its current debt, it is often possible to reduce the debt service burden by extending the maturity profile of the debt. For such a scheme to work it is necessary that interest payments can be met and that by reducing the size of or delaying the individual amortization payments, the periodic debt service payments are reduced to a sustainable level.

The maturity profile of the debt can be extended in two ways. One is to refinance the debt, ie repay existing loans with the proceeds of new loans. This extends the maturity of the debt by the difference between the period to maturity remaining on the old loan and the maturity on the new loan. This scheme has the benefit of being able to take advantage of any improvement in market conditions at the time of negotiating the new loan.

However, to use refinancing it is generally necessary for the borrower to have the market's confidence and therefore good debt management is required to ensure that any refinancing is instituted before a crisis is imminent. Refinancing is a very flexible system suited to a competitive market such as the euromarkets. In particular if some of the members of the loan syndicates do not wish to continue their exposure, new lenders can join the syndicates for the new loan. Because refinancing generally goes smoothly, it is little publicised, yet it is suggested that 27% of euroloans were used to refinance debt in 1978 and this figure will rise to 65% in 1985 (Cohen & Basagni 1980, p106).

The second way to restructure the maturity profile of debt is by rescheduling that debt. This is the negotiation of extensions to the maturity of existing debts. This requires the agreement of all the parties to the existing debt which is cumbersome given the nature of syndicated loans, and technically is a default upon the original loan agreement. Rescheduling is therefore a more complicated process and this may explain why it is only carried out when a crisis has descended upon

the debtor. Like refinancing, rescheduling aims to reduce the debt service burden by reducing the amortization payments in each future financial period.

The current popular debate about the growing likelihood of developing countries having to reschedule their debt is couched in terms that imply that rescheduling is a bad thing and arises as an unhealthy consequence of excessive international bank lending. The need to reschedule this "unhealthily excessive" lending is assumed to have dire consequences for the international financial system. Yet, when in 1978-79, there was a public debate about the refinancing of developing country debt to take advantage of better financial market conditions, there was no such concern despite its impact on the banks' profitability and capital adequacy.

There is no doubt that rescheduling of developing country external debt has become more frequent in recent years; one suggestion is that the number has risen from 3 in 1973 to an estimated 14 in 1981 (Euromoney August 1982).

Bank liability management and debt repayment

The reduced moneyness of eurobank deposits, due to the lack of a cash transmission mechanism, and the greater competition between eurobanks means that eurobanks have to be very active liability managers in order to attract deposits. The eurobanks are therefore continually active in the markets, positively trying to attract deposits from both bank and non-bank sources. Banks will actually take deposits in excess of their immediate requirement and reinvest in the interbank market. They engage in this two-way business, provided they at least break even, in order to maintain their presence in the market and to avoid turning away non-bank depositors. The eurobanks' liability management also extends to maintaining a network of credit lines with other banks.

This continuous and often aggressive liability management is necessary to ensure the continuity of funding for the banks' asset portfolio and to ensure that funds are available for liquid reserves and to maintain the ability to take on new lending business.

On the asset side of the eurobanks' balance sheet, loans have a less than 100 per cent probability of being repaid. Accordingly when the bank is considering its cash flow over time, the cash outflow in terms of repaying deposits or meeting previously agreed loan commitments is more certain than the cash inflow of repayments of principal. Thus, there is a further incentive for continuous liability management by the eurobank in order to avoid cash flow problems associated with late payment by debtors.

It was shown in chapter three the importance of balance sheet growth in the banks' utility function. Given the assumption of portfolio size maximisation, banks will relend any repayments of principal. However, this relending process entails costs, either high search costs when trying to find new non-bank borrowers, or reduced earnings if principal is temporarily placed in the interbank market. It is therefore postulated that the banks would prefer not to be repaid, given their funding ability, but would prefer to roll-over existing debt on current market terms, provided that the costs of rolling-over are less than the costs of searching out new business.

It should be pointed out that the desire to roll-over debt only arises provided that future payments of interest are certain. The reason for this is that a large proportion of the interest receipts, the LIBOR element, from a loan is committed to meeting the interest payments on the bank's liabilities eg the bid rate for funds. Traditionally this bid rate is high relative to the mark-up on eurocurrency loans. Thus, the proportion of interest income that covers costs of deposits is much greater than the element that goes towards profit. If interest income were in arrears, the bank would have to meet its interest commitments

from its profits, reserves and capital in order to maintain depositor confidence and its level of funding. Given the small contribution to profits made by the gross interest revenue of any one loan and given the continued need to fund a loan and therefore the continued funding costs, loss of interest income on one loan will make a relatively large impact upon current profits. Therefore it is clear that although banks may not look for repayment of principal, the maintenance of current interest payments is crucial.

This hypothesis explains the behaviour of many banks in helping to reduce the current debt service commitments of borrowers. They can do this by rolling over maturities so that interest payments are met but total debt service payments are reduced by delaying any repayment of principal.

There are risks associated with rolling-over debt. In particular, as the bank extends the period of its exposure to the debtor, the greater the likelihood is of the debtor defaulting on its commitments. At the same time any restructuring of debt which reduces current amortization payments reduces the risk of default by reducing the periodic demands upon the borrower for debt service payments.

The impact of rescheduling on a bank

For debt rescheduling to cause a breakdown of international financial intermediation, the private costs to the banks must exceed the private benefits to those institutions. Furthermore, this excess of private costs must be large enough to have an adverse effect upon the viability of the banking function. This will probably occur through the excess cost eroding the banks' profits and therefore its capital base, causing insolvency and a loss of confidence by depositors. However, there may be other ways in which rescheduling influences depositor confidence and these are discussed on page 280 below.

The private costs to the banks could be in the form of losses on rescheduled business ie costs of funding not matched by the terms of rescheduled debt. Alternatively, there may be an opportunity cost in that rescheduled debt may not earn as much as would be earned if the principal were reloaned to alternative borrowers.

To what extent is rescheduling per se likely to impose an opportunity cost upon the banks? To answer that question let us imagine a bank that has a loan outstanding where principal is to be repaid in one lump sum at maturity. Interest payments have been made on time but principal cannot be repaid on due date. Current and predicted future cash flow of the debtor allows interest payments to be continued but the principal cannot be repaid until the seventh year hence. Also assume that seven years is the average maturity of euroloans at the present moment. The banks can choose between:

a) trying to recover its loan by instituting legal proceedings against the borrower, which may result in bankruptcy or liquidation. Whatever happens, the bank will lose a customer and may not recover its debt in full. The opportunity cost in this case would be the loss on recovery. This may be substantial if the borrower is technically insolvent.

b) granting a new loan with a seven year maturity at current market terms ie the same terms as the bank would get for lending to a different customer. The opportunity cost in this case would be zero.

c) rolling over ie extending the maturity on the current loan for seven years but adjusting the interest rates (spread and fees) to reflect current market conditions including any change in perceived risk. Again in this case the opportunity cost is zero. This is an example of rescheduling.

Clearly, providing that the interest terms, maturity and grace period of the rescheduling are in line with those of new loans, rescheduling need not create an opportunity cost for the bank and may be financially and politically superior to seeking legal redress.

The important points to note are that the banker perceives that the principal will be repaid and that interest payments are made when due. This last point, as explained on page 272 above, is crucial because eurobanks are active liability managers paying an explicit yield on deposits. Bank loans must earn current interest sufficient to cover the costs of attracting deposits otherwise the bank will make losses which, if unchecked, will lead to insolvency.

Therefore, if the borrower's financial circumstances do not permit even payment of interest, then the loans will be making losses and should be written off by the bank. In general, bankers do not agree to the postponement of interest payments nor to the capitalisation of interest arrears (Economist 20.3.82 p28). One of the problems with the 1980 Polish debt rescheduling was that interest payments were in arrears and the Polish negotiators wanted to capitalise those arrears. The bankers were unanimous in refusing such a request (Economist 20.3.82 p22). However, there have been recent exceptions for Braniff Airways and Nicaragua (Economist 20.3.82 op cit).

If assets - loans - are not earning then the bank's action is clear: attempt to recover principal and arrears of interest by whatever legal means is possible. However, if the asset is potentially earning interest but repayment of the principal is uncertain, the decision is more complicated and depends upon the legal status of the borrower.

The private borrower

In the case of a private borrower even though the banker is confident and decides to roll-over the existing debt, the ability to pay interest and repay principal in the future may be terminated at a future

date by legal action for liquidation or bankruptcy initiated by an existing or subsequent creditor. This creditor may be, for example, a bondholder or a supplier and this creditor's right of action would stem from the debtor's future default on his debt to that creditor. In such a situation the bank's asset will be destroyed if the legal action is successful and the bank will have to rely on any security held or its share of the residual assets of the borrower, if any.

Therefore, when a defaulting private borrower can meet future interest payments but payment of principal is uncertain, the bank has two alternative courses of action. It may call in the loan and may at the same time institute legal proceedings. Alternatively, it may reschedule the loan knowing that if the borrower defaults on other creditors' loans in the future those creditors may institute liquidation or bankruptcy proceedings that destroy the rescheduled assets. Clearly, the bank's decision will be influenced by the quality of any security and its view as to the degree of improvement in the borrower's financial health between now and the future. If the borrower's financial health is expected only to deteriorate in the future, the bank may expect to recover less in a future liquidation than in a current liquidation. Strictly speaking such a decision should be taken after comparing the net present value of the two alternative sets of expected financial flows. One set from the current liquidation, the other set from a current earning asset and future liquidation.

The sovereign borrower

In the case of a sovereign borrower or a private borrower guaranteed by a sovereign power, the situation is different. It is worthwhile rolling over the principal even though its actual repayment is unlikely - provided of course that the willingness and ability to make interest payments are certain and do not impose an opportunity cost upon the bank. This is because the sovereign borrower cannot lose its

legal personality nor can the bank's asset be destroyed through legal proceedings instituted by third parties. The bank's asset will only cease to exist if the sovereign borrower repudiates the loan.

Thus, given the assumed objective of the bank to maximise the size of its earning portfolio, together with the postulated behaviour of aggressive and continuously active liability management making repayment of loans unnecessary for bank cash flow purposes, it is always preferable for a bank to roll-over sovereign debt where expectations of interest receipts are high and expectations of repudiation low.

Given the need for developing countries to have access to private sources of development finance in the foreseeable future, the writer considers the risk of repudiation to be very low. Furthermore, the banking system is at the heart of trade financing. Therefore even if a developing country no longer required medium term development finance, it will require access to the world's banks in order to settle its trading debts. No country, therefore, is in a position to repudiate its debts to banks. However, for an alternative view, see Eaton and Gersovitz (1981).

Thus, from the above analysis, it is clear that at least as far as sovereign debt is concerned rescheduling per se is not detrimental to the international financial system, providing the risk of repudiation is low, interest payments are maintained and there is no opportunity cost to the banking system.

It is necessary therefore to investigate each rescheduling separately to determine the opportunity cost to the banking system before we can determine whether it is a cause for concern. One rescheduling with a positive opportunity cost may have no adverse effects upon the banking system, but the cumulative effects of many, each with an opportunity cost, would be a cause for concern.

One element of the opportunity cost that may change in the future is the way in which the international banking regulatory authorities,

tax authorities and the accounting profession treat rescheduled loans in the banks' balance sheets and profit and loss accounts. If these authorities were to require rescheduled debts to be written down in value in the banks' accounts, this would almost certainly create a positive opportunity cost of rescheduling and influence the solvency of those banks involved and the stability of the international banking system. Much thought should go into such matters before the authorities take any action. In particular why should international loans be treated differently from domestic loans and why should banks be treated differently from other institutions such as building societies in this respect? Clearly, the consequences of treating rescheduled debt as an inferior form of asset requiring some writing down of its value are widespread indeed.

In general the financial terms attached to rescheduling bank debt do not seem to detract from the banks' profitability (Goodman 1982, p28). The 1977 rescheduling of Turkey's debt was at an interest rate of one and threequarter per cent over LIBOR paid monthly. Principal was repaid in monthly instalments over four years after a three year grace period. Disbursements of the new money loan were tied to disbursements under an IMF standby facility (Van de Bey 1982).

Poland's rescheduling of its 1981 debt covered 95% of principal to be repaid over 7½ years with four years grace. The interest rate was one and threequarter per cent over LIBOR with a two and threequarter per cent penalty for late payments. There was also a 1% renegotiation fee (The Economist International Banking Survey 20.3.82, p16).

Clearly where reschedulings are at preferential terms to the borrower there are serious implications for bank profitability and capital adequacy. An example is Nicaragua's 1980 rescheduling which included a 7% fixed interest rate on capitalised arrears of interest and a 12 year loan at 1% over LIBOR and a 5 year grace period (Shaw et al 1981).

One cost of recent reschedulings which would not be incurred if new loans were made to alternative borrowers is that of protracted negotiation. A recent case of Costa Rica's rescheduling in 1981 took one year for negotiation to be completed. The time taken to complete the Turkish rescheduling increased the uncertainty in financial markets such that no new credit from banks or suppliers was made available during negotiations. Export credit insurance agencies stopped covering trade with Turkey. This lack of short term credit exacerbated the country's plight.

An important factor influencing the negotiating costs is that many countries which reschedule once do so again. One reason is that private lenders base their negotiations on the desire to achieve a return to normality in the shortest possible time (Davis 1980). Normality here refers to the resumption of service payments that are overdue. Furthermore, only the current year's debt is renegotiated instead of looking at debt due in future years.

The Paris club and the private banks insist on rescheduling one year's debt at a time. When negotiations on one year's debt are completed, it is time to start on the next year's (Economist 20.3.82, p28). Each negotiation is taken ad hoc, the banks considering that guidelines cannot be laid down because each country is unique. Although the larger banks manifest themselves in each rescheduling, it may not be until the rescheduling is under way that all bank creditors are known (Economist op cit).

Clearly the duration and frequency of rescheduling negotiations imposes explicit costs upon the international banking system. Furthermore, policies of the bank regulatory authorities and accounting profession that require rescheduled sovereign debt to be treated as an inferior asset and written down in value, by reason only of it being rescheduled, may cause exactly those problems which the regulatory authorities are charged with avoiding.

There may also be implicit costs to a debt rescheduling. If depositors perceive rescheduled sovereign debt as being an inferior asset, depositors may have less confidence in the banking system after a spate of reschedulings. This problem will probably manifest itself in the interbank market. It may be that banks which find that a large proportion of their loan portfolio consists of rescheduled debt will find their credit rating lowered and therefore find it more difficult and costly to attract deposits. In reality, this will probably apply to non G10 country banks where the international lender of last resort responsibilities of central banks are less clear (Bell 1982). However, this is a risk for individual banks rather than the market as a whole because if funds are to be removed altogether from the system, they must be held in cash - an unlikely event. Nevertheless, such a lowering of individual bank credit ratings and the attendant rise in interest rates may impose a positive cost of rescheduling for some banks.

Because of the need for new development finance and the tendency for maturities on banks' debt to be shorter than the gestation period of economic adjustment, there is a growing need to reduce the costs of what may be the increased frequency of debt rescheduling. Indeed it is considered desirable to reduce these costs to the point where debt rescheduling can become a legitimate instrument of debt management policy for borrowers and accepted as such by lenders. When debt rescheduling for sovereign borrowers becomes accepted as a legitimate practice, the costs associated with lack of depositor confidence, the attitudes of the accounting profession and the regulatory authorities will be removed. This action will further enhance the usefulness of debt rescheduling as an instrument of debt management.

There is clearly a need for all the parties to the international banking system to understand and implement ways of reducing the costs of debt rescheduling. Two methods are suggested and discussed below. One is to encourage greater understanding by the managers of developing country

debt of the techniques and policies of debt management including the benefits of efficient accounting and information systems relating to the debt. The second is to establish an internationally recognised code of conduct for rescheduling.

In a competitive market such as the euromarkets, there is no cartelisation, no common view, little exchange of information and frequently little common interest. Therefore a code of conduct is important if protracted wrangling is to be avoided. Furthermore, the sheer numbers of participants make ad hoc negotiation cumbersome. According to Goodman, most reschedulings of syndicated loans have involved more than 100 banks (Goodman 1982, p25).

There are precedents for such a code of conduct in documents published by the International Chamber of Commerce relating to Letters of Credit, Commercial Bills and Guarantees. These documents constitute part of the contract between banker and customer because agreement to such conditions is included in the documents signed by banker and customer. It would be equally possible to include an agreement on rescheduling in the loan documentation.

The writer considers that a procedure for rescheduling, which would be established under the auspices of some multinational official institution such as the IBRD, would have the following advantages:

1) Political factors are most important in rescheduling negotiations (Van der Bey 1982). Therefore having an internationally agreed set of rules may ease the politicians' difficulties.

2) Rescheduling may be given a more respectable place in the debt management policy of the borrower and the asset management of the creditors.

3) Time will be saved by avoiding disagreements between creditors as to the terms of the rescheduling by establishing the relationship between the terms of

the rescheduling and current market terms at the negotiations for the original loan.

4) The more enlightened attitude to rescheduling may encourage debtors and creditors to reschedule debt before the crisis arises, thus avoiding crisis publicity and its attendant influence upon confidence.

5) A formal procedure may make it possible to renegotiate not only debt currently due but debt due in the future as well.

6) Provided the rules have the support of the developed as well as developing governments, official debts and non bank debts could probably be handled at the same negotiations. Two important areas here would be export credits, often officially guaranteed by developed country government agencies, and bond issues.

The trouble with setting up a set of rules is that some respectability is seen to be given to reneging on debt.

At present, three major difficulties are envisaged in establishing such a set of rules. They are:

1) Finding an institution which can consistently be perceived as being neutral between borrowers and lenders.

2) Negotiating the detailed clauses that are acceptable to official, bank, bond and other creditors given the political interest of LDCs of obtaining the greatest net transfer of resources.

3) The time taken for the learning process to be completed by both borrowers and lenders about the benefits of reschedulings, together with the time taken to negotiate the code of conduct may be too long to avoid crises which may develop in the short term. Because

these crises are therefore exacerbated, the time when costs of rescheduling are substantially reduced and rescheduling itself is viewed in a more enlightened vein will be delayed even longer.

Nevertheless, these difficulties should not hinder active discussion of ways to improve sovereign debt management policy. There is evidence that the banks themselves consider that the current ad hoc arrangements for rescheduling are less than satisfactory. Some suggestions noted by Bell, op cit, include:

i) A group to advise the banks on rescheduling similar to the groups of merchant bankers advising LDCs.

ii) Greater liaison between banks and international institutions. The IMF could then exert pressure to improve economic performance so as to enhance the ability to service debt.

iii) The regulating authorities must take a more flexible approach to capital adequacy in the light of substantial rescheduling in the future.

These suggestions by Bell do not cope with negotiating differences between the banks, between the banks and the debtor, nor between the banks and other types of creditor. The recent case of Costa Rica highlighted animosity between the banks and bondholders.

The rescheduling of official debt is usually carried out at separate negotiations and on different terms than private debt. Maybe all debt could be dealt with at the same negotiations. This may seem a cumbersome operation but if procedures were standardised, this may simplify the process dramatically. This system would also cope with the recalcitrant bank which decides to sue and enforce a judgement rather than help the debtor for the mutual benefit of all concerned.

One suggestion noted by Bell, op cit, was to use the IMF as a lender. However, the IMF has never been a major supplier of funds to LDCs (refer chapter one). The IMF's sum of quotas has shrunk in real terms from 12% of world exports in 1960 to 4% in 1980. The ability of the IMF to enable a member country to avoid rescheduling is severely limited. For example, the maximum amount available to Mexico is $1.3 billion in one year compared with a 1982 deficit of $14 billion (Euromoney 1982a) and debt currently thought to total US $80 billion.

However, there may be a role for the IMF in the rescheduling process. It could liaise with the body enforcing the code of conduct and all the parties, lending a small amount of money and acting as an economic adviser to the developing countries much as it does already. If in a rescheduling, new bank money or extensions of bank credit were only to be made available if IMF finance bearing high degrees of conditionality was made available concurrently, the confidence of the bankers in rescheduling may be increased. The 1979 rescheduling for Peru provided for such a scheme (Goodman 1982) as did the 1981 scheme for Bolivia (Economist 20.3.82 p42).

One problem of making commercial bank rescheduling dependent on some other financial event, say IMF parallel finance, is that if the country does not meet the conditions of that other finance, eg the terms of IMF conditionality, the bank rescheduling fails and the financial condition of the borrower may be exacerbated. This appears to have happened with Jamaica in 1980 (Economist 20.3.82).

The suggestion that the IMF should cooperate with the IBRD and the commercial banks in rescheduling and that IMF conditionality should be part of the rescheduling does not imply that the writer is unaware of the political criticisms of the scheme, particularly that two western 'capitalist' institutions are combining to minimise the benefits accruing to developing countries. To some extent this criticism can be

mitigated as the number of banks outside the OECD countries join the syndicated loan market and agree to comply with the code of conduct on rescheduling.

However, it is for this political reason that it is suggested here that the IBRD should administer the rescheduling agreement. The IMF should cooperate so that the conditionality of IMF money is compatible with the debt management policy that is optimal for the developing country. It is also thought that the IBRD is more acceptable to the developing countries because it does not have a history of animosity caused by conditionality. Moreover, the Bank would have considerable professional respect from the private bankers because of its expertise in development banking. However, it would be necessary for the IBRD to soften its approach to rescheduling its own debt.

If the IMF or IBRD were to act as convenors of creditors' meetings, the loan agreement could specify the banks in the negotiations which will represent all the banks in the loan agreements. This may be a new duty for the agent bank.

As the Bank and the Fund have annual meetings with members they could make suggestions about debt management to reduce debt servicing problems and also advise to seek a rescheduling early on, before payments are in arrears. The use of parallel financing will enable funds from the private sector to be combined with some IMF or IBRD resources to refinance maturing debt and help reduce the costs to the developing countries without reducing the profitability of the banks.

The establishment of this code of conduct may be seen as an admission by the banks that some of the original terms of the lending may not be complied with - in effect that their lending policy and risk analysis are less than perfect. However, two things make modern syndicated lending to developing countries different from other forms of bank lending. Firstly, these loans are frequently programme loans. Their aim is to finance the adjustment process of a whole economy. The time

span of this adjustment, difficult to forecast at any time, will be uncertain at the time the loan agreement is signed. Given that what is long term in bank lending is short term for macroeconomic adjustment, it is to be expected that the maturity date of the loan will have to be extended.

Secondly, the loans have floating interest rates and are generally in foreign currency at least from the borrower's point of view. Furthermore, much of what is to be purchased with the loan proceeds - capital goods - is also priced in foreign currency. The 1970's has been a period of fluctuating interest rates and exchange rates unprecedented in recent history. These factors make it very difficult to forecast the ability to service the debt and keep to those forecasts. The debt servicing costs have generally risen over the 1970's and early 1980 as LIBOR has risen and fluctuations in exchange rates make the value of interest and principal in terms of domestic currency uncertain until payments are due.

Therefore in many respects floating rate foreign currency loans create greater uncertainty for both the borrower and the lender. It seems obvious, therefore, that there should be periodic reviews of the debtor's ability to service each debt. When the debtor's financial circumstances change it seems reasonable to change the conditions of the loan so as to avoid a crisis which only damages both debtor and creditor. One problem with bank lending to developing countries is that because of the large number of banks associated with each loan, such periodic reviews are difficult to carry out. Therefore, consensus for change is difficult to arrive at without some framework like that suggested in this section. As a result reviews and changes in loan conditions resulting from changed financial circumstances only come about when there is a financial crisis.

In the survey of banks seven questions were asked about the restructuring of debt, in particular about bankers' attitudes to greater

flexibility in maturity structure, the major costs of debt rescheduling, the treatment of rescheduled debts in balance sheets and bankers' attitudes to a code of conduct similar to that suggested in this section. The responses are reported in chapter seven, pages 341-344.

6.6 Improved information flows for country risk analysis

Bank sources of information can be classified at three levels: 1. Sources within the bank such as economic analysis, information from branch offices and from visits by bank executives to the country concerned; 2. Purchased sources of specialist information eg consultancy studies, official statistics from the LDC or such bodies as the IMF; 3. Day to day snippets of information from the 'News' (Hagen 1981, p22). Theoretically the bank will continue to collect and analyse information until the marginal cost of collection equals the marginal benefit of using that information.

One difference between lending to OECD based corporations and governments on one hand and LDCs on the other is that the cost of gaining information on LDC risks is so much greater. In many cases the cost of gaining information of a similar quality (ie accuracy, currency and disaggregation) is infinite because such information is not available to the lending banker. Indeed it may not be available to the government of the developing country.

Thus it is reasonable to assume that lending bankers often analyse LDC credit proposals with less information than a similar proposal from an OECD based borrower. Accordingly the banker will perceive the loan as having greater risk because of the greater uncertainty involved. Consequently this lack of information reduces the banker's loan portfolio for a given level of income because of the higher risk associated with that level of income.

It is clear therefore that any system that increases the quality

and reduces the cost of information required by bankers to make valid credit decisions, will assist in providing the appropriate flow of funds to the developing countries. Furthermore, to the extent that that information is not available to the developing countries themselves, making it available will assist those countries in their general macroeconomic policy formulation, and in their debt management policy in particular. In this respect the example of Zaire is quoted by Donaldson (1979) where it took several months just to determine the extent of Zaire's debts before credit proposals could be negotiated.

Improvement in the quality of financial management of the developing countries was found by Lees & Eng (1979) to be significant in increasing access of those countries to international capital markets. While Hope (1982) notes that the developing countries can benefit from improved information regarding their debts in the following ways:

1) Improved information ensures more appropriate borrowing decisions.
2) Improved information enables better debt management. There may be direct financial gains here because of avoiding penalties for late payment of interest and principal.
3) Improved information allows the borrowers to have advanced warning of the needs to refinance or renegotiate debt in order to avoid debt service difficulties.

Clearly therefore both borrowers and lenders will benefit from improved financial information about the less developed economies.

It is often considered that the IMF, IBRD and similar institutions have superior information to that of the private banks and that the banks should try to share in that information. However, for this to be done in a formal and consistent manner may risk undermining the confidential relationship between the IMF or IBRD etc with their members.

The IMF is currently considering how to reconcile its confidential relationship with member countries and the need for better information by private banks. Three suggestions are being considered:

1) To give more background information about the debt position of developing countries.
2) To increase the Fund's influence when engaged in parallel financing with the private banks.
3) For Fund officials to attend meetings between the banks and the borrower even when the Fund is not directly involved in lending (Financial Times 4.10.82 p15).

It may be possible to include in a loan agreement a provision that the borrower will instruct the IMF or similar institution to transfer information to the lending bank. However, given the competition to lend, this may only be enforceable in a period of tight credit. Furthermore such a move may be resisted by the international body lest it result in reducing the quality of the information flowing to that body.

The system of co-financing, to be discussed below, does enable the private banks to share in the knowledge and expertise of supranational institutions because in the terms of the co-financing the borrower gives permission for the IBRD to transfer information to the banks.

There would seem to be substantial social and private economies to be derived from an organised central source of information. Being staffed by experts, this organisation could investigate the LDCs' sources of data, giving advice and assistance to the LDCs on improving quality. This information would be such as to fulfil the requirements of best banking practice. It may also be possible to provide 'off the shelf' country risk analysis for the smaller banks. The output of such an organisation would also be of benefit to the authorities charged with regulating the world's banking systems and the eurobanking system in particular.

The improvement of the quality of currently produced official statistics should also be continued. Wider statistical coverage of the euromarkets is required, while statistics on bank lending should be expanded to include short term credits. Currently, the measurement of short term finance (under one year) to LDCs is of very poor quality yet, although it is onerous to record these debts because of their numbers, they represent collectively a substantial claim upon the nation's foreign exchange resources (ref chapter five, page 236).

It is not only information flows from developing countries of monetary agencies that need improving. In order to evaluate the banks' risk of lending to developing countries, each bank must be aware of its total exposure to each borrower. Therefore the internal accounting information systems of each bank must be able to provide all the required information. Yet in a recent Financial Times World Survey of Bank Annual Reports, only 24 out of the world's top 100 banks published fully consolidated accounts (Lafferty 1982). Although the banks may have unpublished consolidated data this cannot be taken for granted. Moreover, it is the published accounts which other banks use when assessing the credit standing of banks with regard to interbank lending.

Six questions regarding the quality of information were included in the banking survey. These asked about the quality for the banks' risk analysis and for the government's macroeconomic policy formulation. Questions were asked about the desirability of a credit rating agency and about the establishment of a central organisation for collection and dissemination of information. The results are reported in chapter seven, pages 344-346.

6.7 Co-financing with multilateral lenders eg IMF and IBRD

Co-financing is an arrangement whereby funds from various lenders are combined with funds from a multilateral official agency to finance

a project. The World Bank provides the major part of its co-financing in association with official bilateral loans and official export credit agencies but there is growing scope for co-financing with private lenders. An alternative approach to co-financing is for the World Bank to sell off participations in loans it is currently negotiating (Eng et al, op cit).

The technique of co-financing can either be in the form of joint financing ie a common set of goods and services are purchased, or there can be parallel financing where separate parts of the project are financed by different sources of funds. This latter often provides more flexible financial arrangements and is favoured by official co-financiers.

Since 1975 it has been the policy of the IBRD to increase the private involvement in co-financing. This financial technique could also be used by the IMF in a formal way in order to increase the flow of funds to LDCs. The IBRD has found that its portion of the financing acts as a catalyst in attracting other funds and the IMF has noted the informal arrangements whereby sometimes private bankers only lend if an IMF facility is made available and IMF conditionality is complied with.

For the private banks co-financing adds status to the loan and reduces the risk associated with that loan. The risk is reduced because the banks are given vicarious access to confidential IBRD data about the borrower and the greater political clout of this multilateral institution. This clout is derived from the high priority that borrowers give to servicing IBRD debt (Eng et al, op cit). This is because the IBRD is a source of funds for countries who have not as yet progressed to be eligible for private finance. The IBRD is therefore a first line of finance. If the first line commitments are defaulted upon, the borrower will be reducing considerably its chances of ever being able to raise private finance. This political strength is also passed to the banks via cross default clauses in the co-financing agreements. With

such a clause if a default is declared by the private lender, then the IBRD loan would also be in default. Because developing countries are anxious to maintain good relations with such official institutions, the private banks' position is that much safer. The access to confidential data comes directly from the conditions of the co-financing agreement where the borrower agrees that the IBRD may pass on confidential information to the private banks.

The IBRD is thought to have superior information of, and ability to analyse, projects and thus will be expected to provide the information and administration of the loan. This superiority stems from the greater use made by the IBRD of specialists such as engineers, economists and others in a painstaking analysis. Furthermore, the private bank's analysis is made in a more competitive environment where there is pressure to complete many analyses. Thus the banks are pleased to be able to take advantage of the 'in depth' IBRD studies (Leeds 1980).

The commercial banks enjoy the advantages of reduced loan administration, improved information, access to a broader range of loan opportunities and reduced overall risk in portfolio. There may also be a learning function for smaller banks as they learn about the analysis and administration of large project loans.

Co-financing would therefore seem to be an ideal vehicle for increasing the access of developing countries to private capital markets where this access is constrained not by the cost of private funds but by the lender's perception of risk. Yet to date co-financing does not seem to have caught on. The Economist notes that up to 1981 187 banks linked up with the World Bank and that of the 1.8 billion supplied by private banks to June 1981, 24% came from American banks, 22% from Japanese banks and 33% from British and European banks (Economist 20.3.82 p47).

The following data show that most of the finance for individual projects usually comes from the World Bank and that most of the co-financings have been for countries that already have considerable access to the private capital markets.

Table 6.1

Signed co-financing agreements between the World Bank and private banks, December 1975-July 1979*

Country	Industrial sector	Date agreement signed	Loan amount provided by: World Bank ($ millions)	Private bank ($ millions)
Brazil	Steel	12/1975	95	55
Brazil	Steel	12/1976	60	50
Ecuador	Port construction	3/1977	33.5	10
Argentina	Electric power	8/1977	115	50
Malaysia	Electric power	8/1977	22	30
Thailand	Hydro power	9/1977	50	20
Argentina	Industrial finance	10/1977	100	100
Brazil	Fertilizer	11/1977	82	20
Brazil	Electric power	12/1977	82	54
Brazil	Fertilizer	2/1978	50	25
Paraguay	Highway construction	6/1978	35	5
Brazil	Electric power	7/1978	52	20
Brazil	Fertilizer	8/1978	**	30
Mexico	Tourism (hotel construction)	12/1978	50	25
Brazil	Fertilizer	1/1979	64	25
Yugoslavia	Agricultural finance	2/1979	55	20
Brazil	Aluminium smelter	4/1979	98	90
Uraguay	Highway rehabilitation	6/1979	26.5	7
Paraguay	Highway construction	7/1979	39	5
Romania	Livestock	9/1979	75	100
Dominican Republic	Republic tourism	11/1979	25	10
Brazil	Electric power	11/1979	109	60
Yugoslavia	Hydro power	11/1979	73	35

* This list includes only co-financing transactions conducted by the World Bank in which there was formal collaboration with a group of private commercial or merchant banks. It should be noted that if the broader definition of co-financing were used - Bank funding or a project in which funds from any source outside the borrowing country are involved - of course, the list would be considerably longer.

** Second co-financing complementary to November 1977 project.

Source: The World Bank. Quoted in Leeds 1980.

One reason why co-financing may not be as popular with the private banks is that the spreads and fees tend to be lower than on other loans. Despite the reduced perceived risk by many bankers, they still require a reasonable return on their total assets (Buchanan 1982). Furthermore, some, particularly US, bankers have been concerned that bank shareholders may not perceive co-financed loans as bearing reduced risk. In such a situation the banks' stock market ratings will fall.

The role of co-financing in extending the number of countries having access to private markets has been slight, yet it is precisely here that the private banks will benefit most from the IBRD expertise and the cross default clause. Firstly, because the private banks are not major lenders to these countries, they would get even greater benefits from the World Bank's relatively greater knowledge. Secondly, the cross default clause will be an even greater sanction to countries who need greater reliance upon IBRD funds.

Leeds (op cit) has suggested that co-financing could be extended beyond bank syndicated loans to insurance companies, pension funds and even bond holders. However, to the extent that regulations preclude these institutions from lending to LDCs, co-financing seems to have little to offer. Where risk is the main constraint, provided that lenders perceive co-financing as reducing the risk to the private lender, it should facilitate access to new sections of the private capital markets. However, there seems little point in bond holders taking on the greater risk of co-financing projects when they can invest directly in the IBRD. A further benefit for the financial institutions may be the gaining of other business from a wider range of developing country borrowers.

An extension of co-financing is parallel-financing, where the bankers make their loan drawdown conditional upon implementation of the IMF's stabilisation programme. Unfortunately such a system seems unlikely to operate except as a result of a crisis since the

conditionality attached to IMF loans means that members approach the IMF only as a crisis looms.

Three questions about co-financing were included in the survey. They related to the bankers' perception of the advantages and disadvantages of co-financing, whether increased co-financing will increase the flow of funds to LDCs that do not already have access to bank finance or only increase the flow of funds to those that already have bank finance. The results are reported on pages 346-8 of chapter seven.

6.8 Bank credit insurance and loan guarantees

Bank credit insurance is organised on an official basis in most industrialised countries but is generally limited to export related credits. Much of this credit consists of medium and long term loans, many funded through the euromarkets and many at subsidised rates of interest. The minimum rate of interest to be charged by EEC members, and thus the maximum subsidy from those members is determined by the 'Consensus', which meets under the auspices of the Berne Convention.

However, much of the new bank lending to LDCs has been in the form of programme loans. As such there are no identifiable exports which can be the basis of export credit insurance. Because of this, either a new institution would have to be established or existing institutions would have to change their policies. Unless the insurance institution was supranational, the problems of non-uniformity of behaviour by national agencies would provide similar problems to non-uniformity in supervisory functions.

Any sort of loan insurance must impose private costs either on the borrower or the lender. Furthermore, the premiums should be related to risk in order to deter imprudent banking practice. Thus, the private loan insurance organisation should increase the premiums on loans to

countries of high risk thereby encouraging those countries to put their houses in order. But in markets as competitive as the euromarkets, it is possible that banks will undercut competitors by not insisting on loan insurance. This weakness can be overcome by the supervisory authorities developing a common and advantageous attitude to insured assets compared with uninsured ones. Secondly, the policy of advertising the proportion of a bank's assets that are insured may influence depositors, particularly those in the interbank market, to favour banks with a high proportion of insured loans. Thus competition for deposits may force all banks to insure their loans.

Furthermore, although there are many banks involved in the euromarkets, some are relatively small participants in syndicates. The number of large banks which are major leaders of syndicates is relatively small and most of these are in the G10 countries. Accordingly if the major banks are persuaded to join the loan insurance scheme, it is unlikely that any smaller banks avoiding the insurance scheme could establish syndicates to lend at such a magnitude as to put the international banking system in jeopardy.

The point has been made (Dorrance 1981) that insurance is similar to a guarantee and that when a banker receives a guarantee he looks to the guarantor for repayment. Therefore guarantees should be avoided because they will encourage banks not to carry out adequate risk analysis. This in turn will increase the risks to the international banking system.

The Dorrance thesis assumes that the costs of relying upon the guarantee are less than relying upon repayment from the original creditor. This, however, confuses the real nature of a guarantee. A guarantor is only secondarily liable to the creditor. Therefore, the creditor must first seek payment from the original debtor and the debtor must fail to pay before the guarantor is liable under the guarantee. The crucial question therefore is:- what costs does the creditor have to

incur in trying to recover from the debtor before he can claim from the guarantor or insurance fund?

Consequently, when analysing any loan guarantee or insurance scheme, it is important to ensure that the costs to the creditor are sufficiently high to make rigorous credit analysis necessary but not so high as to negate the advantages of the guarantee or insurance scheme.

Here we are concerned with explicit guarantees. The assumed or hoped for guarantees such as those thought to be available from the USSR regarding Polish debt are not real guarantees. They are no more than political events, their likelihood of actually existing being part of political risk analysis.

We must also distinguish between guarantees from financially independent and sound third parties and guarantees from financially related guarantors. The country risk of lending to a corporation located in one country or to the government of that country is similar. If the bank is concerned with country risk then a government guarantee is not much help. If, on the other hand, the bank is only concerned with corporate credit risk, then a government guarantee is useful. Therefore, a guarantee or insurance scheme whereby the guarantor is financially independent of the borrower is beneficial because the credit or country risk is genuinely diversified.

Dorrance (op cit) makes the point that either the insurance premiums will increase the cost of capital to the developing countries or if these premiums are reimbursed as a part of aid, then other aid will be reduced. This may be so but there is clearly some concern that the markets will, in the future, impose further credit rationing; if the insurance scheme avoids such credit rationing, the social benefits of increased credit availability may exceed the social costs of the insurance scheme. We already see the costs of credit rising as individual countries demand more credit. Insuring the loan may reduce the risk premium required by the bank thereby providing additional

finance at no higher explicit cost to the LDC borrower.

Clearly it is possible for credit insurance or guarantees to be beneficial to both borrowers and lenders but to be socially beneficial it must place costs on imprudent banking practice.

A scheme suggested by Zolotas (1978, 1979, 1980) does impose such a cost in the majority of cases. The proposed International Loans Insurance Scheme only insures a proportion of each of the loans insured. As, according to this scheme, the loans are guaranteed by the IMF, IBRD, OPEC and the industrialised countries or alternatively a cooperative of private financial institutions, these loans are from the lenders' point of view prime risks. Therefore the banks should expect only a prime risk return on such loans. Zolotas therefore suggests that the difference to the borrower between the return on an insured and an uninsured loan will be paid to the insurance fund. The borrower therefore pays the spread and fees combination as if the loan were uninsured. This suggestion has the merit of not increasing the costs to the developing country borrower.

However, there are two weaknesses: one is the use of the IBRD as guarantor; the other is the attempt to make the scheme self-financing on an insurance basis. With respect to the IBRD as a guarantor, if this institution issues substantial contingent liabilities, it may be compromising its credit rating. Such compromising would reduce its ability to raise development finance, at least at the finest rates, and would therefore jeopardise its major function, or at least make IBRD funds more expensive. Thus, the poorer developing countries who rely on IBRD funds may be financing the richer borrowers from private markets. This same problem may occur with the IMF if it should wish to raise finance from the capital markets in the future.

The second point stems from the fact that the fees-spread return on bank loans tends to be squeezed at periods of high liquidity and these are generally associated with global payments imbalance. This squeezing

narrows the differentials between prime borrowers and more risky ones. Thus the revenue going to the insurance scheme will frequently be very small and may not provide a large enough insurance fund.

Furthermore, if this fund is not sufficient, the individual guarantors of the funds will be supporting the activities of banks over which they have no control and countries over which they have no political influence. There may therefore be a conflict of interests between the guarantors eg loans to Argentina being insured and the guarantors being UK and USA.

The problem of supporting banks over which the individual guarantors have no control is similar to the problem of the international lender of last resort, and indeed a similar amount of regulatory power may have to be transferred to the insurance scheme (see page 325 below). Indeed if the insurance fund is inadequate, the guarantors will collectively be lenders of last resort.

It is important to determine which risks the insurance fund would pay out on. From the discussion on rescheduling above, it would seem that the only costs to the banks, as far as sovereign loans are concerned, would be upon a repudiation by the borrower, or a rescheduling on subsidised terms. Given the infrequency of such occurrences in recent years, is it necessary to establish a new institution to cover such a risk? Moreover, as loans to corporate or individual borrowers can be more easily associated with exports, projects, etc the existing export credit insurance agencies may be sufficient for the task.

Any proposed international insurance fund may facilitate better information flows from LDCs. The fund would be able to carry out country risk analysis and thus save the efforts of the banks. This may avoid the problem of confidential information being transmitted to the banks themselves.

There may be an additional advantage to insured loans, that is that

borrowers may be less willing to default on such loans because of the political influence of that default upon the guarantors. Furthermore, the insurance fund may easily stop the flow of new credit to defaulters or irresponsible debtor countries by refusing to insure their borrowings.

Haschek (1980 & 1982) suggests that the system of insured buyer credits should be expanded so as to reduce the risks to the bankers in international lending. He also suggests that the official export credit agencies should expand their functions by borrowing in the euromarkets. In effect they will be engaged in recycling.

With respect to increasing bank lending to developing countries, the increased use of buyer credit insurance has the merits of being speedy to implement; because such systems already exist there is no need to use resources to establish a new institution. However, the existing official export credit insurance institutions are used as aids to export competition policy. It would be unfortunate if their work was hindered because of the multinational nature of the syndicates.

The increased use of such schemes does not obviate the constraints on future bank lending of capital adequacy and profitability. For such a constraint to be removed, the regulatory authorities would have to treat insured loans more favourably when analysing capital adequacy, liquidity, loan concentration and total exposure.

Haschek's suggestion that the official export financing agencies should expand their function will only transfer the current problems from one set of financial intermediaries, generally private, to another set, official intermediaries.

Six questions on credit insurance and loan guarantee schemes were included in the writer's survey. The questions asked about bankers' attitudes to guarantee schemes, whether they would result in less prudent lending decisions and whether ECGD or similar institutions should cover programme loans. Questions were also asked about the impact of loan insurance upon

loan costs, whether availability will lead to tiering in the interbank market and whether insured loans should be treated preferentially in bank balance sheets. The responses are reported on pages 348-51 of chapter seven.

6.9 Prudential monitoring and regulation of bank lending

There are three types of banking regulation:

1) those designed to implement monetary policy, such as open market operations and reserve requirements
2) those designed to preserve the safe and stable functioning of the monetary system
3) those designed to achieve non monetary goals such as the redistribution of credit.

(Dean & Giddey 1981)

In this section we concentrate upon the regulations of type 2) above.

A strong argument for bank regulation to safeguard the financial system arises from the externalities associated with the banking function of providing the medium of exchange and the function of intermediating between borrowers and lenders. If the moneyness of bank liabilities is to be maintained, they must be acceptable. It is therefore crucial that the financial viability of the banks is undoubted. To this end it is necessary that the banks are seen to behave within prudential limits. The social benefits of the function of financial intermediation are to be found in the bridging of an information gap between the financial surplus and financial deficit units in the economy (Furness 1969). If the process of intermediation is broken, many units of production relying on credit will be forced to cease production with detrimental effects upon economic welfare. In other words the role of supervision is to provide the public good of

financial stability. The act of financial intermediation is a fair weather activity in that the intermediary's liquid reserves are a small proportion of its assets. If the financial climate deteriorates, the reserves of a bank are quickly exhausted, assets must be sold; they fall in value and thereby threaten the bank's solvency (de Vries 1982). Supervision aims at minimising unwarranted risks and providing liquidity in times of stress.

Official control of domestic banking operations by domestic governments of OECD and many other countries is well established. However, those same countries generally have a looser form of control, if any, over the foreign currency lending of banks within their borders including branches of foreign banks. Moreover, there is no supra national mechanism for control of international banking and therefore what international control there is, results from the inter-relationship of the various national controls of individual governments. Yet the banks engaged in international banking are often also engaged in domestic banking. Accordingly loss of confidence or a deterioration in the bank's financial health could as easily be generated from the bank's domestic activities as from its international activities. It is therefore invalid to separate the domestic and international supervision and regulation of banking. Yet this is exactly what governments do. For example, there are reserve asset ratios in domestic banking, but they are often non-existent in eurobanking. There are lender of last resort schemes and deposit insurance schemes for banks' domestic operations but not for their international operations.

Supervision in the context of both the domestic and the international banking systems is related to ensuring an adequate minimum quality of management and balance sheet. This immediately raises the question of whether officials are better able to judge the quality of bank management and financial health than the bankers themselves. The answer lies in the degree to which the officials can be more objective

and have a more complete picture of the global situation.

Officials are likely to have a more objective approach because they will be free of the competitive pressures between banks, and even between the functions within a single bank. Where competition manifests itself in high weightings being given to the growth of balance sheets and earnings in the banks' utility function, the quality of the banks' balance sheet may decline. Likewise if the growth of business is important in assessing the performance of individual functions, any prudence suggested by the risk analysts may be ignored by those responsible for marketing the banks' services. This is particularly pertinent when it is considered that bank staff move between jobs for career development and the current incumbent of a position may not expect to be in that position when problems arise.

The central bank officials will also be able to use confidential information supplied by the whole market when assessing the performance of an individual bank. Furthermore, those officials could be instrumental in desseminating details of the best techniques of banking from the most advanced members of the system to the less advanced. A good example of such techniques would be those used in country risk analysis where there may be economies in the provision of information if it comes from the central bank rather than being researched separately by the individual banks.

It was seen in chapter three of this thesis that some writers consider that growth of the euromarkets is associated with an asymmetry in banking regulations. This means that the eurobanking carried out in a particular banking centre is relatively less controlled than in domestic banking in the same centre. It has been shown in chapter four of this thesis that this lack of regulation gives rise to interest rate differentials in favour of the euromarkets, and that these differentials are the main reason for continued separation of euro from domestic banking.

A good example of this asymmetry explains the growth of London as the major euromarket centre. London imposed few regulations on eurobanking whilst maintaining controls over domestic banks. Other European centres, in contrast, imposed more regulations over the eurobanking as well as domestic banking (Cohen & Basagni op cit, p154). It is clear therefore that national differences in attitudes to bank regulation have a profound influence upon the competitiveness of banks in different countries and therefore the growth and stability of eurobanking in those countries.

The following sections analyse four areas of supervision that are directly related to the risks associated with international bank lending. These areas are:-

1) The use of consolidated accounting information
2) Capital adequacy
3) Liquidity
4) International cooperation in supervision and regulations

Consolidated accounts

Clearly prudential supervision should cover a bank's domestic and foreign operations because failure of an overseas branch or subsidiary is likely to affect the parent organisation. The degree of effect will depend on the size of the participation of the parent bank. At one extreme will be a branch trading under the same name as the parent bank. Here a loss of confidence or insolvency in the branch will strongly influence confidence in the parent. At the other extreme is the case where the bank only has a minority interest in an overseas operation. If the bank is not responsible for policy, weaknesses in the operation's business are unlikely to affect the depositor's confidence in the parent bank.

The use of consolidated accounts stops head offices from directing

bank business to lesser regulated jurisdictions because the prudential regulation is in the light of the whole of the bank's global business.

In 1979 the President of the BIS wrote to member central banks asking them to cooperate in the introduction of bank supervision on the basis of consolidated accounts. Furthermore, there is an EEC Directive which makes banking supervision based on consolidated accounts obligatory for EEC members (Thring & Jones 1981).

Consolidated accounts are the most appropriate form of accounts in the supervision of:

- capital adequacy
- loan concentration
- country risk
- open foreign exchange positions
- liquidity (Colje 1980)

Where bank supervisors place limits upon the level of exposure to one borrower either in terms of quantity or degree of concentration, clearly it is the exposure of the bank's global business to that borrower which is important. Thus consolidated accounts are essential.

Where supervisors monitor country risk exposure then, again, they are concerned with the degree of exposure of the bank's global activities and therefore need consolidated accounts.

Foreign exchange exposure and liquidity should also be monitored by the bank's parent authority to ensure the overall health of the bank. However, these aspects of bank business must also be monitored in each national market by the national authorities since local market conditions and regulations affect liquidity and the stability of foreign exchange markets.

However, it is not sufficient that there be international agreement to use consolidated accounts. There must be agreed uniformity regarding the format of the accounts, definitions and interpretation, and the parameters of supervision. This need for international cooperation is

discussed in more detail below (see page 313).

Capital adequacy

The role of capital in a financial intermediary differs from that in other types of organisation. In these other organisations the capital provides the initial injection of resources with which to start business. During the life of that business increases in capital provide increased resources for investment. However, for a financial intermediary, the resources for continuing business come from deposits, which result from depositors having confidence in the intermediary. True this confidence may be influenced by the existence of the capital stock but other factors will also be influential. Therefore the role of capital for a financial intermediary is seen as a cushion or insurance fund to absorb losses that may occur (Reed 1964). This insurance role is emphasised when it is remembered that it was traditional for UK banks to issue partly paid shares or uncalled capital so that the callability acts as an insurance against capital inadequacy.

Nevertheless, both financial and non-financial companies typically secure the bulk of their capital resources from their retained earnings. Revell (1975) noted that retained earnings and capital adequacy are substitutes for each other, although he thought that retained earnings are the first line of defence.

Clearly then as the functioning of financial intermediaries relies on confidence; adequate capital and profits are required to reassure depositors, bank supervisors and markets generally.

Definition of capital

Gardner (1981) defines net worth as the book value of shareholders' interests in the company. The essential components of net worth are paid

up share capital and accumulated reserves. These reserves are increased by revaluation of assets, transfers from provisions, or from retained earnings. New share issues will add to net worth by adding to capital.

It is the increased net worth through new issues of share capital or increased earnings which represent an increased cushion or insurance fund. However, it should be noted that Gardner refers to the book value of shareholders' interests. To the extent that published financial and internal management accounts do not reflect the true value of assets and liabilities, the book value of shareholders' interests will not reflect the true value of the insurance fund.

If the bank's net worth is to be used as an insurance fund, it must be seen to be capable of being used to meet creditors' demands. Clearly many fixed assets are not in that category and also book values of relatively liquid assets which are in excess of realisable values distort the measure of the insurance fund.

The extent to which the net worth constitutes an insurance fund in the mind of creditors depends upon the liquidity of the assets represented by the net worth compared with the liquidity of the creditors' claims. Thus if one is a depositor with expectations of high liquidity, the insurance fund would only be constituted of those assets that can quickly be turned into cash. However, if one is a long term subordinated debt holder one's perception of the insurance fund may include the whole of the net worth.

Clearly, therefore, at least in the case of financial intermediaries, the notion of net worth is inadequate as a measure of capital within the context of capital adequacy. To overcome the weaknesses of net worth, the concept of Free Capital is used by some analysts. Free capital comprises Net Worth - Fixed Assets.

However, this concept of free capital is only as valid as the accounts from which it is calculated. One problem is that many provisions, such as 'doubtful debts' made against profits are

subjective; excess provision deflates profits and therefore the book value net worth, while under provision inflates profits and the book value of net worth. Currently there is debate about the lack of provision being made against LDC sovereign debt. While the high bad debt provisions of the UK clearers in 1981 are said to be because of the current recession, could they not also be a response to the political concern about high bank profits in 1980?

Given the weakness of using accounts as indicators of capital, the traditional ways of measuring capital adequacy via balance sheet ratios must also be suspect when used without additional information.

Capital adequacy and bank supervision

The role of the bank supervisory authorities with respect to capital adequacy is to ensure that the capital is of adequate quantity and quality. With respect to quality, the capital must be such that it is perceived as an insurance fund by depositors and other creditors. With respect to quantity, this must be sufficient to absorb unforeseen losses without causing the bank to become insolvent, nor to lose confidence in its ability to continue functioning.

So, how much is enough capital? The capital to assets ratios of four leading US banks fell from 5.01% in 1970 to 3.58% in 1979. For the UK clearing banks the ratio fell from 7.63% to 6.02% over the same period. Likewise for German banks the figures are 4.26 to 3.93 (Cohen & Basagni 1981, p152). The ratio of free capital to deposits for the London clearing banks fell from 4.1% in 1969 to 2.5 in 1974 rising to 3.0% in 1976 (Willson Committee 1978).

The reduction in these capital ratios has coincided with increased liability management and growth of interbank markets, both domestic and eurocurrency. There have been greater possibilities for portfolio diversification particularly for US banks after 1973. Improved bank

management systems have also contributed to the relatively more efficient use of capital. However, increased volatility of interest rates and exchange rates together with the increased perception of risk associated with lending to LDC sovereign borrowers make it prudent, ceteris paribus, to increase the 'cushion' in order to maintain market confidence.

What is an adequate level of capital depends upon the nature of the institution's business as reflected in its balance sheet and profit and loss accounts. It is therefore unlikely that any single measure of capital adequacy will be equally suitable to all banks. In particular the riskiness of each bank's assets and the liquidity profile of its liabilities are important, and yet their significance will probably be lost by the sole use of ratios complying with fixed predetermined criteria.

Accordingly, it is necessary for the supervisors to judge capital adequacy separately for each bank in the light of the constituency of its balance sheet, level of profitability, the current market conditions and the efficiency of each bank's management.

In the words of the Bank of England:

> "The acceptable relationship of free capital to risk assets to be sought will vary for different categories of banks and even from bank to bank within a category. It will need to take account of each bank's historic experience, the spread of business and other special factors which might affect future profits", (Bank of England 1975b).

The Bank of England looks upon balance sheet ratios "..... only as adjunct to individual assessment of each bank in the light of its own particular circumstances", (Bank of England 1975a). The Bank also notes the importance of adequate earnings in that if these can confidently cover normal loss experience there will be less need for capital resources.

Again, like other areas of supervision, there are international differences in attitudes to capital adequacy. We have only looked at the

attitude of the Bank of England. If other governments are less concerned, their banks may become the weak link in the chain of interbank transactions. The insolvency of one bank abroad may reduce confidence in the whole market, with costly results for the borrowers in developing countries.

Attitudes to capital adequacy will influence the banks' ability to lend to the developing countries in two ways. Firstly if the banks perceive that their capital asset ratios have reached a prudential minimum, they will not increase their loan portfolio. Secondly if the banks' capital asset ratio has reached the minimum set by the regulatory authorities, bank lending will not be increased.

Both these constraints apply if the banks cannot increase their capital base. However, the ability to increase this base depends upon what the regulatory authorities consider to be capital, the attitude of capital markets to banks as investments and the profitability of the banks. On the first point, shares and subordinated long term debt are generally accepted as capital by the authorities. However, the issue of shares by UK and US banks does not seem to be popular. Indeed in the case of US banks it will be difficult because shares have recently been trading at below net asset value. Furthermore, US bank bond prices have recently been falling due to investor concern about bank loan portfolios.

There is concern that reduced spreads on international lending will reduce the profitability of this lending and the need to make increased provisions for bad debts will reduce profits and therefore the ability to maintain an adequate capital base. This is particularly important considering the influence of inflation upon the growth of bank assets.

Clearly there is a possibility that there may be a capital constraint on new lending. The regulatory authorities, therefore, have three duties:

1) Not to develop prudential attitudes to capital adequacy that are more stringent than necessary.
2) Not to unduly restrict the banks' ability to raise new capital.
3) To ensure that excessive competition or imprudent banking practices do not reduce profitability to unacceptably low levels. This point confirms the spuriousness of dichotomising domestic and international banking for supervisory purposes. Reduced profits on international or domestic business will have the same influence upon capital adequacy.

Of the nine questions about prudential regulation included in the survey, four related to capital adequacy. They covered the reasons for declining capital asset ratios of recent years, whether further decline will be detrimental and the most appropriate ratio for the respondent's bank. The results are reported on page 351-54 of chapter seven.

Liquidity

Liquidity is the ability to convert assets at minimal cost into the means of payment. Thus liquid assets not only comprise cash and demand deposits held with banks, but also other assets depending upon the costs, implicit and explicit, involved in their conversion. Clearly the cash flow of a bank has an important influence on its liquidity. This cash flow may come from revenue, amortization of loans, maturing debt assets and sale of assets.

Liquidity is required by banks to maintain confidence by meeting all demands for withdrawals of deposits and for new loans. It is also required to meet the unanticipated shortfalls in inward cash flow for any reason, increased operating or capital expenditure and losses.

Maturity transformation has an important bearing upon a bank's need for liquidity as does the level of certainty in banking operations. If banks had perfectly matching maturity structures to their assets and liabilities and complete certainty as to repayment of their loans, their need for liquidity would be considerably reduced. Furthermore, greater liquidity will be required the greater the uncertainty associated with the inward cash flow of the financial intermediary.

It is important to differentiate between liquidity for an individual institution and that for a whole market. An asset is liquid because the holder can sell it easily and without substantial loss. One or two banks holding, say, treasury bills could sell their holdings without greatly influencing the price. However, if a whole market is selling treasury bills to gain liquidity, those assets will lose their liquid properties because they will be difficult to sell and any sales will be at substantially discounted prices.

Clearly then, prudential supervision of liquidity, like that of capital adequacy, should avoid sole reliance on liquidity ratios. In particular the degree of uncertainty attached to each component of cash flow and the availability of standby facilities should be taken into account.

International differences in the degree of supervision of liquidity increase the possibility that a crisis may affect the euromarkets via the banks subject to the weakest supervision. However, it is frequently true that prudential liquidity considerations are closely related to monetary control regimes which differ between countries and within countries from time to time. This may render it impossible to develop a framework for worldwide application of liquidity analysis that is internationally acceptable (Cook 1981).

Both liquidity and capital adequacy are related to the solvency of the organisation. To the extent that minimum solvency criteria set by supervisory authorities are greater than those that would be voluntarily

set by the organisation, they constitute a tax on its activities. When there are geographical differences in the tax being imposed, there will be pressure on the banks to move, via the establishment of branches and subsidiaries, to those areas imposing the lowest taxes. This problem can only be solved by imposing solvency conditions on the basis of worldwide consolidated accounts for each bank.

Furthermore, these geographical differences in the tax will mean that those banks located in low tax areas will have a competitive advantage over banks in high tax areas. There may therefore be pressure on the authorities imposing stringent regulations to relax those regulations (Colje 1982). If such regulations are not relaxed, a greater proportion of new lending will be from less regulated banks, thus also weakening the whole system. This clearly shows how the weaknesses of the international financial system are related to the weakest set of regulations. In order to overcome this problem there is a need for international agreement as to the stringency and nature of supervisory practices.

In the survey questions relating to liquidity were asked within the context of international differences in regulation which is the subject of the next section.

International cooperation in supervision and regulation

Differences in national attitudes to the methods and stringency of bank supervision weaken overall control and therefore security of the global banking system. In particular footloose banks may gravitate to the least regulated jurisdictions or engage in the least regulated types of business. Examples of the former include US banks opening branches in London or banks moving to the 'off-shore' banking centres such as Bahrain and Singapore.

Furthermore, because of the international nature of the interbank

market, banks in highly regulated jurisdictions may be exposed to the risks of banks in less regulated jurisdictions (Dale 1982). However, it must be remembered that the euromarkets are very efficient. It may be that the differing rigour in regulations leads to a tiering in the interbank market with strongly regulated banks being perceived as lesser risks and therefore obtaining funds more cheaply. If the interest rate differential reduced costs by more than the tighter regulations increased them, then banks would not gravitate to the least regulated jurisdictions. In fact, if there were any tiering in the interbank market because of location, banks would not wish to be identified as being higher risk institutions and therefore would not locate in the least regulated jurisdiction.

Differing governmental attitudes regarding the control of euromarket banking arise not just for prudential reasons, but for macroeconomic policy reasons. Although it is not intended to discuss this aspect of banking control, its very existence makes the achievement of a uniform system of prudential supervision all the more difficult.

An awareness of the dangers of the disparities in bank supervision and regulation, at least amongst the G10 and Switzerland, lead to the establishment in 1975 of the BIS Committee on Banking Regulations and Supervisory Practices (The Cooke Committee). The general guidelines were published in the so-called Basle Concordat in 1975. A subsequent communique (15 April 1980) from the BIS stated that closer surveillance of international banking was to be carried out by the Standing Committee on euromarkets, meeting at least twice a year. In addition, the G10 countries and Switzerland instructed the Cooke Committee to step up its efforts, via member country authorities, to monitor the banks' international activities using consolidated accounts and to monitor the methods of assessing country risk exposure and maturity transformation (BIS 1980).

A very important area of concern, at least until 1983, was the

uncertainty as to which authorities are responsible for taking action in times of crisis. While it is recognised that a central bank will be responsible for the supervision of foreign branches of banks whose head offices are within its jurisdiction, it is by no means clear that the same applies to subsidiaries and consortium banks (Dale, op cit). This concept of 'parental responsibility' was, however, not uniformly applied. This is because countries such as Luxembourg and Switzerland maintain rigid secrecy laws which prevent foreign supervisory authorities from obtaining the required information about the activities of their own banks' operations in these centres (International Currency Review, July 1982).

May 1983 saw the publication of an improved version of the Basle Concordat. This document noted that banks' operations abroad could be classified as those of branches, subsidiaries, or joint ventures (consortia). It also considers that there are two basic principles of international cooperation in bank regulation between parent and host authorities. Firstly, no foreign bank should escape supervision and secondly, that supervision must be adequate. Thus host authorities should inform parent organisations of any problems regarding a bank's foreign establishment and parent authorities should inform host authorities of any problems affecting the parent bank that also influence the bank's foreign establishment.

Host authorities are to be responsible for foreign bank establishments operating within their territories, while the parent authorities, on the other hand, will be responsible for the bank's general worldwide activities on a consolidated basis.

The 1983 Concordat lays down the host and parent responsibility in respect of solvency, liquidity and exchange exposure and each of these items in respect of branches, subsidiaries and joint ventures.

So, with regard to solvency, while the host authorities are responsible for the financial wellbeing of branches within their

jurisdiction, the parent authority has primary responsibility for the solvency of branches. This is because branch solvency is indistinguishable from that of the parent bank. However, the supervision of solvency of subsidiaries is jointly the responsibility of host and parent authorities, the latter supervising on a group consolidated basis. With respect to supervising joint ventures, this should be the responsibility of the authority in the country of incorporation.

Supervision of liquidity is generally the responsibility of the host country for branches, subsidiaries and joint ventures, with the parent authority looking at the consolidated liquidity situation of the whole bank. The supervision of liquidity in this respect excludes the lender of last resort facility. The host authority has a duty to inform the parent authority of any serious liquidity inaccuracy in a parent bank's foreign establishment.

Supervision of foreign exchange exposure is also the joint responsibility of parent and host authorities. Host authorities should supervise the foreign exchange positions of the establishments within their jurisdiction, while the parent authorities will monitor the position of the bank on a consolidated worldwide basis.

These statements in the 1983 Concordat assume that both host and parent authorities have similar views as to what are banking and non banking companies, as well as mutual respect in regard to supervisory ability. With regard to this latter point, if the host authority is unhappy with the ability of the parent authority, the host should restrict the activities of establishments with such parent authorities. On the other hand, if a parent authority has reservations about the ability of a host authority, the parent authority should extend its supervision to the foreign establishment or discourage the parent bank from operating any establishment in the host authority's jurisdiction.

The current approach to international banking supervision has several weaknesses.

The first weakness is that compliance by the national authorities with the recommendations made under the auspices of the BIS is voluntary. This results in a lack of uniformity between national regulatory systems as to definitions of banks and the stringency of regulations.

The second weakness is that only the central banks of the G10 countries and Switzerland have been covered by these recommendations. Yet there is a growing presence in the euromarkets of banks from outside this geographical area. Until the central banks of all countries whose banks are engaged in international lending adhere to the BIS recommendations, there may be a weak link in the system. However, it must be noted that the Cooke Committee is extending its consultations with supervisory authorities who were not signatories to the Basle Concordats.

Thirdly, there are no recommendations about the functioning of an International Lender of Last Resort, nor about an International Deposit Insurance Corporation. This point has lead some commentators to suggest that neither Italy nor Luxembourg broke the Basle Concordat when they allowed Banco Ambrosio Holdings to fail in July 1982. Supervisory responsibility does not necessarily mean Lender of Last Resort responsibility (Euromoney, October 1982).

Fourthly, national differences in the rigour of bank supervision may itself produce an inherent instability. This will result from depositors perceiving that some banking centres are safer havens than others. Thus at the first signs of a crisis, funds may move from centres of lax regulation to centres of strong regulation, irrespective of the financial health of the individual institutions losing the deposits.

There is clearly a need to remove the inherent instability caused by national differences in the stringency of regulations. However, the obvious method - that of negotiating internationally uniform regulations - does not seem to be a practical solution. An alternative approach, which may at least be partially enforceable by the G10 countries is to stop banks operating branches overseas and allow them to operate only

locally incorporated subsidiaries. Furthermore, the concept of parental responsibility should be limited in its applicability to subsidiaries operating in overseas centres with a comparable degree of supervision. This policy would result in the perceived safety of banks being influenced by the regulatory climate of their location, not that of their parents. Unless these less regulated locations put their supervision on an internationally comparable basis they would risk losing banking business.

The survey included five questions about the international cooperation in supervision. The questions centred on bankers' willingness to locate in or deal with banks located in less stringently regulated locations. However, one question was asked about whether the bankers thought that supervisory responsibility also implied the provision of lender of last resort facilities. The responses are reported in chapter seven, pages 351-354.

6.10 Lender of last resort

In the domestic context the lender of last resort function is carried out at two levels. One, in relation to the day-to-day orderly conduct of financial markets where institutions have access to the central bank's discount window on a formal and frequent basis. The second in relation to providing substantial resources, often with the assistance of other private institutions, to selected institutions who face a fundamental financial crisis that threatens their viability as financial intermediaries. It is this latter function which is discussed here.

Concentration of deposits from a few large depositors increases the impact of liquidity risk if those deposits are withdrawn from the euromarkets. Given the degree of maturity transformation by eurobanks, this may put the intermediating function at risk. However, theoretically, this risk should only affect one or some banks but not the whole market.

This is because unless the depositor is willing to hold cash instead of a deposit, the funds must end up in the world banking system somewhere.

Nevertheless, the weakness of one bank may cause such increased perception of risk in the market so as to create temporary financial instability. Accordingly the central banks of the G10 countries indicated in 1974 that they will provide such assistance to the euromarket in their individual jurisdictions so as to avoid any disruptive consequences. However, the markets seem to be unclear as to the true meaning of this statement. Does it mean that no large bank will be forced into liquidation or does it mean that help will only be granted to the market as a whole, thereby allowing large and small insolvent banks to fail?

Moreover, the supervisory concept of parental responsibility discussed on pages 313 to 318 above does not necessarily mean lender of last resort responsibility. This has resulted in the Bank of England requiring 'letters of comfort' from each of the head offices or parent organisations of the banks operating in the UK euromarket. Similar action has also been taken by a number of other central banks.

One weakness of the support system is that to date the one time that it has been tested, ie the Banco Ambrosio affair, it failed and therefore cannot engender confidence for the future. Although there was disagreement as to whether Banco Ambrosio Holdings was in fact a bank, it was the differences in supervisory attitudes between Luxembourg and Italy that resulted in lack of financial support for the ailing institution. Furthermore, the agreement only covers banks in the G10 countries. There is some uncertainty regarding parental responsibility for subsidiary and consortium banks who have shareholders outside these countries. Therefore, before much confidence can be placed upon this system, it is essential that a uniform policy be established and that central banks from non G10 countries and in particular Arab countries should be involved.

It was noted above (page 317) that the differences between national

banking regulations created an inherent instability in the international banking system. Nowhere is this more obvious than in national differences in domestic lender of last resort facilities. If a lender of last resort is desired to add stability to the international banking system, then either the various national systems must exhibit considerable uniformity or an international body to carry out such a function will have to be established.

When considering the establishment of an international lender of last resort, it should be realised that the domestic equivalent is accompanied by the power of supervision and regulation. Therefore, an international system should only be established if the international organisation has similar and sufficient powers (de Vries 1982). However, given the differences in national attitudes to supervision and regulation, an international lender of last resort is unlikely to be established because the individual member central banks could not be expected to underwrite the activities of banks over which they had no control. Thus uniform attitudes to supervision and regulation seem to be prerequisites to the establishment of an international lender of last resort.

If such a system were to be established, it may encourage some banks to take imprudent risks if the banks knew the circumstances and conditions under which they would get assistance. McMahon suggests that this problem can be overcome by not publicising these terms and conditions "Emergency assistance is inherently a process of negotiation and judgement ....." (McMahon 1977). If the Bank of England's activities in the UK secondary banks' crisis and the recent building society failures can be taken as a guide, those negotiations will result in other private institutions coming to the assistance of the defaulting one. Similar action has been followed in the USA, in relation to local banks, under the guidance of the Federal Deposit Insurance Corporation.

If there is to be reliance upon flexibility in the criteria used for

access to a lender of last resort, there must be even greater emphasis on continuous and uniform supervision and monitoring by central banks. Indeed monitoring would ideally be executed by the international lender of last resort organisation. However, banks operating in international markets also operate in domestic markets, thus this organisation would need to monitor and have influence over domestic banking as well. This may prove politically unacceptable and it may be more fruitful for the international consultations on bank supervision to strive for uniformity for domestic lender of last resort facilities. If this is combined with agreement about the concept of parental responsibility, there will be an effective system of lender of last resort for international banking.

Notwithstanding uniformity of domestic lender of last resort facilities, there will still be a major weakness of relying on individual national systems. This weakness stems from the fact that the stock of international banking debt is large relative to a single nation's reserves. Therefore a single domestic lender of last resort may have difficulty supporting the foreign currency operations of banks under its control without experiencing adverse movements in its exchange rates (Williams 1982). Therefore international cooperation regarding the availability of lender of last resort resources is essential.

The problems associated with an international lender of last resort have been summarised by Dean and Giddy as follows:

1) When should the lender of last resort intervene? If this institution has autonomy in this respect, central banks' domestic monetary control may be undermined. Yet without that autonomy, depositors look to domestic lenders of last resort.

2) Where would this institution get its funds from? If it creates its own credit it will, in effect, be a global central bank.

3) Will this institution support banks from non participating countries? If it does not, instability will remain; if it does, there will be a tremendous free rider incentive.

(Dean & Giddy 1981, p41)

To overcome these problems, they suggest that central banks should encourage mutually supportive lines of credit commitments between banks for use in an emergency. A fee would be charged by the central bank on the difference between total deposits on one hand and insured deposits and credit lines on the other in order to encourage such a system. This fee would be in exchange for lender of last resort facilities. Two problems with this suggestion are that it may result in a cost differential against some banks unless all countries were within the system; and secondly, it assumes that there is international agreement about lender of last resort facilities.

However, to the extent that all banks will suffer if one bank fails, it is in their interests to provide a system of mutual support. Indeed, it already exists in a rudimentary way because lines of credit between banks were shown in chapter two to be one way in which banks attract funds. The reason why all banks will suffer if one fails is that there may be a general lack of confidence and loss of deposits or they could suffer a decline in asset values following a forced sale by some banks.

The suggestions of Dean and Giddy have the advantage of placing a limit on the support that the central bank would be required to give - this limit being the difference between total deposits on the one hand and insured deposits and credit lines on the other.

Furthermore, because the market is providing the credit lines, the cost of those lines to each bank will be related to the perceived riskiness of that bank's business. Thus banks' desires for risky assets will be constrained by the higher cost of credit lines.

Even if an international lender of last resort is established, much of its success will be difficult to measure because the aim of

establishing such an institution is to maintain depositor confidence. If it is successful it will not be called upon to act.

Ossola (1980) suggests that the IMF and BIS should combine to enter into standby swap agreements with the major banks in the euromarket. These agreements would be activated if the banks suffered liquidity crises because of defaults, reschedulings or government action. The requests for support would come from the bank but be judged by the IMF/BIS.

The IMF/BIS would reimburse themselves by drawing upon the swap agreements with eurobanks not affected by the liquidity crisis. This would amount to intra-market recycling. The duration of the assistance would be limited thus imposing a potential cost to imprudent banking.

It is notable that Ossola gives the IMF/BIS authority to dictate criteria for capital adequacy, loan concentration and provisions of reserves against risks. Furthermore, the IMF/BIS would expect collateral against activated swap agreements.

These suggestions have the advantage of more clearly formalising the interlocking lines of credit that already exist in the euromarket but also have one other advantage. Swap agreements between the banks and the IMF/BIS would not be withdrawn when crisis is impending thus the system is more durable than the current system of lines of credit.

Four questions about an international lender of last resort were included in the survey. These questions asked if the bankers were in favour of an international lender of last resort, the form that they would most favour and whether such an institution would encourage banks to engage in more high risk lending. The results are reported on page 354-356 of chapter seven.

6.11 Bank deposit insurance schemes

Bank deposit insurance was initiated in the USA with the Federal Deposit Insurance Corporation. A similar scheme has recently been

instituted in the UK under the Banking Act 1979 and a scheme is operated in Germany by the Federal Association of German Banks.

At first sight it would seem natural to extend the insurance coverage to the foreign currency deposits with the domestic banks and all deposits held by domestic banks' branches overseas. However, such a scheme would mean insuring deposits in localities with varying degrees of prudential control and differing political climates.

Furthermore, the maximum sum of each deposit insured under the domestic schemes would be inadequate in the international market.

One criticism made by the UK banks to the proposed UK scheme was that the undoubted banks had to pay towards insuring the doubtful banks. This inequity would be compounded if the domestic scheme were simply extended to overseas branch deposits.

A well known suggestion for an international deposit insurance scheme was made by Grubel (1979). He proposed an International Deposit Insurance Corporation. Its proposed features were as follows:

- voluntary membership but with measures to persuade countries to join;
- the moral hazard problem is reduced through setting insurance premia according to risk or by having only partial insurance;
- funds for the IDIC would be guaranteed by member governments;
- IDIC would impose conditions upon members so as to eliminate jurisdictional problems.

Grubel notes that if one country refuses to join then banks may transfer their business to that country to avoid payment of premiums and would therefore have a cost advantage over other banks. Thus the low margin in eurobanking would make it necessary for all eurobusiness to be domiciled in the insurance free country and the scheme would fail.

But would it? Surely an insured deposit is a better quality asset for the depositor than an uninsured one, ceteris paribus. In a market with a fear of default eg USA, banks find it worthwhile to advertise the fact that they are members of the FDIC. So maybe in the euromarkets the banks would find it good publicity to be insured. The difference is that the size of deposit covered would have to be very large relative to the domestic schemes.

Grubel noted that the full value of such a scheme may never be known because it acts as a deterrent to crises. Probably the greatest quantity of resources would be used in designing and negotiating a suitable scheme rather than in bailing out failed banks.

One criticism of such a scheme is that it might make depositors, including interbank and other wholesale depositors, less prudent. For instance, banks may increase their exposure limits on interbank dealings. This can be tempered by insuring only a proportion of the deposit held.

This insurance company would have to protect deposits subject to widely differing degrees of prudential control; Grubel attempts to overcome these problems by allowing the insurance company to impose uniform regulatory standards and set variable insurance premiums related to risk.

Such a scheme would only work if a considerable amount of regulatory power were transferred to the IDIC from member governments. Moreover, because the same banks engage in domestic and eurobusiness, the IDIC would have to have considerable influence over domestic as well as foreign banking. Domestic monetary authorities will therefore lose some of their regulatory autonomy. Furthermore, who is to decide when a crisis is in the realm of the domestic monetary authority, the IDIC or the world's central banks? (Dean & Giddy 1981 b). Thus the establishment of an IDIC would be more a political than a commercial act.

Many of the problems of establishing an IDIC are similar to those of establishing an international lender of last resort and uniform standards

of bank regulation. The overriding problem is political in the sense that domestic banking authorities will have to surrender some of their autonomy if these systems are to be established.

One question about deposit insurance was included in the survey; it asked if banks were in favour of deposit insurance generally, whether it should cover deposits at overseas branches and whether it should cover interbank deposits. The results are reported on page 356 of chapter seven.

6.12 Portfolio diversification

It has been shown in chapter five, page 242 that it is possible to classify portfolio risk as either systematic or unsystematic, and that under certain conditions it should be possible to increase the efficiency of an asset portfolio by diversifying away the unsystematic risk.

The efficiency criterion is where the income of the portfolio cannot be increased without increasing the overall risk of that portfolio. In order to be able to diversify away the unsystematic risk, the expected returns on the individual assets must be uncorrelated with each other.

If portfolio diversification is to be useful as a way of reducing the banks' exposure to LDCs, the portfolios must exhibit considerable unsystematic risk. Furthermore, the banks must be able to diversify their portfolios.

It has been noted in chapter five, page 247 of this thesis that bank loans to LDCs exhibit considerable systematic risk. The main reasons are:

1) Servicing costs are all related to LIBOR or a similar rate;
2) Many loans are denominated in one currency and the majority in only 3-5 currencies, thus there is a common currency risk;
3) Because foreign exchange is required to service debt, exports depend upon sales to industrialised countries;

4) Many LDCs use loans to produce similar primary products; thus if the price of a product falls in world markets, many borrowers are adversely affected.

There is, however, clearly some unsystematic risk in bank loan portfolios and to the extent that this can be diversified away, more funds can be lent to LDCs, including a wider range of those countries, without reducing the efficiency of the bank's portfolio.

To reach the position of an efficient portfolio, the banks must have unfettered ability to diversify. Currently there seem to be three major restrictions on portfolio diversification. These are:

1) Lack of detailed knowledge of unsystematic risks by the banks.
2) Large minimum size of participations combined with relatively few countries that have had access to the eurocurrency market.
3) Market imperfections, particularly indivisibility of the loan asset, and the small secondary market in loan participations.

Work by Hager (1981) and the Robert Morris Associates (1980) suggests that bank management do not have the information to assess the degree of portfolio diversification beyond the country level. Thus a bank may lend to many countries but if all the borrowers rely on production of the same commodity to service the debt those loans will be subject to considerable systematic risk. The above studies did not attempt to assess as large a number of banks as this study but their findings are similar to those of the writer reported on page 334 below. Clearly improved management information systems regarding lending risks will help reduce the overall unsystematic risk of the loan portfolio.

The current absence of a deep secondary market in loan participations means that the only way in which a banker may change the

structure of his loan portfolio is to change the exposure limits for each borrower. This can only be achieved by changing the rate of new lending relative to amortization payments and will be a time-consuming process.

Although there has been a market in loan participations for some time, it is a shallow market and considerable transactions costs are involved. Furthermore, recourse still relates to the original participant bank and not to the debtor country. As such, selling a participation does not reduce the original lender's country exposure. Clearly a deep secondary market and a change in the status of sold participations will be helpful in portfolio diversification.

Will the banks, however, be willing and able to take losses by selling participations on fixed spread loans when market spreads are above those on the loans being sold? What will the secondary market price of bank loans do to depositor confidence?

It therefore seems clear that for adequate and continuous loan portfolio diversification to reduce the unsystematic risks to be borne by the banks, the banks themselves must:

1) Develop management information systems to enable them to determine the degree of loan diversification at least down to industry, commodity and conglomerate level.
2) Develop a deeper secondary market in loan participations. This may require the development of floating rate spreads or at least more frequent predetermined increases in the spread during the life of the loan.

Question 4 of part one of the survey asked about the ability of the banks' management information systems to determine the degree of diversification in the loan portfolios. Diversification was by five categories of borrowing and determined on a branch only or group consolidated basis. The results are reported in chapter seven, page 334.

Four questions were included in the survey to ascertain bankers' attitudes to a deeper secondary market in loan participations and to floating spreads. The results are reported in chapter seven, page 356.

Chapter 7

THE SURVEY

7.1 Introduction

The aim of this survey was to determine the attitudes of the lending bankers to the suggestions, detailed in chapter six, for facilitating the continued flow of new lending to LDCs. At the same time the opportunity was taken to ask questions about bankers' corporate aims and objectives with regard to their international lending activities.

The survey population was selected on the basis that the banks fulfilled three criteria:

that they were included in The Bank of England's list of Banks and Licensed Deposit Takers;

that they were included in the List of the Top 500 Banks published by 'The Banker' magazine;

that they were included in the Euromoney/Hambro directory of Euromarket banks.

This selection procedure resulted in 212 banks being included in the survey. However, this figure proved to include banks which did not, for one reason or another, lend to developing countries. Thirty banks returned the questionnaire uncompleted for this reason. It is therefore considered that the valid sample size for this survey is 182 at a maximum.

Of these 182 banks, 62 responded positively, 31 banks said that they were not willing to partake in the survey, 6 banks made joint responses with their parent or associate organisation in the United Kingdom. Eighty three banks failed to respond at all after one reminder and a period of four months had elapsed since the despatch of the main survey on 28 February 1983.

Prior to this date a pilot survey covering 30 banks was completed with 10 banks responding. These responses indicated that the

questionnaire only needed minor amendment to the wording of two questions. These amendments were made and the main survey embarked upon.

The positive responses to both surveys accounted for 33.5% of those surveyed. Of those that made negative responses 12 said that it was not their policy to respond to "unofficial questionnaires" and 3 said that their office did not make corporate policy in these matters, such policy being dictated from an overseas Head Office.

Of the 83 banks who did not reply to the survey request 19 were banks from developing countries.

Of the 62 banks responding positively to the survey, 15 were US banks located in London, 7 were UK merchant banks, 3 were UK clearing banks, 4 were other British banks, 2 were consortium banks, 7 were Japanese banks in London and 23 were other overseas banks located in London. One response could not be classified due to the respondent mutilating the code number on the questionnaire. The respondents included the major eurocurrency syndicate leaders of recent years.

The questionnaire itself (see Appendix VII) was divided into two main sections. Section one asked questions about the constraints and perceived risks of international lending and asked questions about the corporate aims and objectives of banks engaged in such lending. Questions 1, 3 and 4 specifically related to constraints and risks and the answers thus relate to chapter six of this thesis. Questions 2 and 5 related to corporate aims and objectives and thus relate to chapter three of this thesis.

The second section asked questions about methods of reducing the risks of international bank lending. These questions were grouped under eight sub headings:

1) Reducing the debt service burden of interest payments

2) Debt restructuring

3) Improving the quality of information about LDCs

4) Co-financing with the IBRD or similar international institutions

5) Credit Insurance and Loan Guarantee Schemes

6) Prudential controls

7) International Lender of Last Resort

8) Miscellaneous

The subsections 1-7 follow sections in chapter six discussing the benefits and disadvantages of each of the various suggestions. Subsection 8. asks one question about deposit insurance and four questions about the advantages of a deeper secondary market in syndicated loan participations.

The responses to the questions which indicated that a limited choice of response was required eg Yes/No or Important/Not important, etc have been aggregated and analysed for the whole group of respondents and for subsections of banks as follows:-

US banks

Japanese banks

UK clearing banks

British merchant banks

Other British banks

Other overseas banks

X^2 tests and analysis of adjusted residuals were carried out as suggested in Everitt (1979) to determine any statistically significant differences between the responses of subgroups of banks and the overall group of responses.

In general, the theme of the responses in this chapter is that of the responses of the whole group but where a subgroup or groups gives statistically significantly different responses, these are highlighted in

the discussion. The full details of the overall responses are given in Appendix VII.

It was not considered appropriate to classify the 'comment' responses by subgroup because no two responses were exactly similar and therefore interpreting the "feeling" of such responses is somewhat subjective. Any subjectivity would, in many instances, be invalidated by the small number of comment responses received from certain subgroups for certain questions.

7.2 Section I of the survey

Corporate objectives of banks lending to LDCs
Constraints on and risks of lending to LDCs

This section asked five questions. Numbers 2 and 5 related to the banks' corporate aims and objectives in lending to LDCs. Questions 1 and 3 related to the constraints on and risk in international lending. Question 4 asks about the level of knowledge that the banks possess about the degree of diversification of their loan portfolios. The mixed order of questions was decided upon in order that questions 2 and 5 could be set apart so that responses to question 5 could be used as checks on those of question 2.

7.2.1 Constraints and risks

Question 1 in this section showed that doubt about future debt servicing ability is the major constraint to further bank lending to LDCs. Full utilisation of exposure limits and capital adequacy were respectively second and third in importance. Question 1ii shows that 44 out of the 61 respondents considered debt servicing ability as the main constraint.

There is little difference in the relative importance accorded to each constraint by the individual subgroups of banks in the survey. One exception was that the Japanese banks found utilisation of exposure

limits relatively more important than other banks. This is probably due to the control exercised by the Japanese central bank over the international lending of Japanese banks.

Question 1iii asked about the relative changes in the constraints over the last five years.

Most respondents considered that debt servicing capacity and capital adequacy had become relatively more important constraints in recent years.

However, some thought that capital adequacy was relatively even more important than debt servicing capacity. This constraint was particularly exacerbated by reschedulings that distorted debt service flows but also required fresh lending. Tighter prudential controls were also considered to exacerbate this constraint.

It was also noted that the exposure limits and capital adequacy constraints were related to debt servicing ability in that exposure limits and capital were more likely to increase when debt was being serviced properly. Poor stock market ratings for the banks due to bad debt service on LDC loans will make raising capital more difficult.

Some respondents thought that profitability was less of a constraint now that spreads generally, including those on rescheduled debt, were rising. However, the overall response to the profitability constraint is that it was never substantial.

Forced rescheduling was considered by one bank as creating a constraint of inadequate portfolio diversification. Another respondent considered that a future constraint would be the crowding out of LDC borrowers as lending opportunities increased in the industrialised countries as their economies recovered.

Question 3 was aimed at ascertaining what type of risk the banks considered most important. Inability to service debt, corporate credit risk and concentration of borrowers were most frequently included under the classification "very important". Interbank credit risk, project risk,

concentration of depositors were most frequently included as "important".

The most important risk was considered to be the inability to service debt.

With respect to the changing relative importance of these risks, the inability to service debt was growing in importance as was the concentration of borrowers, this latter risk being exacerbated by debt rescheduling.

There were no statistically significant differences between the groups of banks and their perception of the relative importance of the various risks except for the US banks' perception of the importance of corporate credit risk. Relatively more US banks classified this risk as "important" and relatively fewer classified it as "very important" compared with the groups as a whole.

Question 4, relating to portfolio diversification, showed that the majority of banks had information at the bank group consolidated level for diversification by country, by industrial classification of the borrower and by parent organisation. However, sizeable minorities, 18 for industrial classification and 15 for parent organisation, did not have such information. Moreover, only 26 respondents indicated that they had information at the group level regarding diversification by source of borrowers' income while 6 had such information at the branch level only.

Responses to item e (other forms of diversification) indicated diversification by maturity, by currency, by guarantor or shareholder of borrower.

There were no statistically significant differences between the subgroups of banks.

Clearly there is an undesirable lack of information about the diversification of loan portfolios particularly regarding the source of borrowers' income. Some banks will, therefore, be unaware of the extent to which their loan portfolios are subject to unsystematic risk in this respect.

Lack of such information is a hindrance to the use of bank consolidated accounts by the regulatory authorities, as without such

supplementary information the usefulness of group consolidated accounting information must be less than optimal for the task of regulating the international banking system. The responses to this question indicate that some improvement in consolidated coverage is required.

7.2.2 Corporate objectives of banks lending to LDCs

Question 2 was the first of two questions aimed at ascertaining banks' corporate aims and objectives in relation to their lending to LDCs.

Profitability followed by support for home based export industries were by far the most frequently mentioned aims. New market development and risk control followed in frequency, while support for local economies and growth of balance sheets were also mentioned.

In terms of relative importance, as reflected by the answers to 2ii, profitability was the most important, followed by support of export customers. Responses to 2iii regarding changes in the relative importance of these objectives over the last five years, suggested that banks' objectives were dominated by the need for asset growth and profits growth in the early years. Furthermore, post 1973 many banks wanted to be seen as international banks and this lead to an expansionary lending strategy. Responses to 2iv suggest that objectives change not so much because of a learning process but because of the achievement of previous objectives. Here the achievement of a growth objective and the subsequent concentration on profits or risk/reward relationship was mentioned on several occasions.

Question 5 listed some aims of firms frequently found in economic theories of the firm and asked about the relative importance of each aim to the responding bank.

In the overall response the aims of maximising profits and of reducing risk were very important with asset growth and asset growth subject to a profits constraint dominating the "important" category. In terms of the relative importance the reduction of risk was considered the most important aim with profit maximisation second.

There was a statistically different response from the US banks and

the Japanese banks compared with the whole sample in respect of the aim of asset growth. The American banks found asset growth relatively less important than the sample as a whole and the Japanese found it relatively more so. This difference can be explained by the relative maturity of each group as international lenders.

A notable feature of the responses to question 5i is the number of responses where asset growth or asset growth subject to a minimum profits constraint were combined with profit maximisation. Subsequent discussion on this matter with a number of respondents indicated that during the 1970's at least the banks were looking for growing profits from growing balance sheets and that to the extent that banks were aiming to maximise profits in the economic sense they were aiming for long run profit maximisation and that the adjustment to the long run in sovereign lending was still taking place.

The attitudes of the US banks and Other Overseas banks to the aim of minimising risk differed from the sample as a whole. The US banks gave greater weighting to this subject as "important" compared with "very important", while Other Overseas banks gave greater weighting to this aim as "very important" compared with "important".

Answers to question 5iii indicated that minimisation of risk was now the most important aim, as indeed is suggested in responses to question 5ii. However this is a new phenomenon and in the recent past growth of assets with or without a profits constraint was the most important objective.

Answers to question 5iv raised the aim of client support particularly export clients by providing buyer credits. The objective of support for home based export business was a frequent response to question 2i, such responses being confirmed by those to question 5iv.

To summarise so far, the responses to section one of the survey suggest that the bankers perceive the main risk as inability to service debt and that this risk is seen as the major constraint upon further

lending. The questions in section two of the survey explore some ways of reducing this risk to the banker and thereby removing the constraint.

The responses to questions 2 and 5 give considerable credence to the model of lending bank behaviour suggested in chapter three.

Although the banks see maximising of profits as a major objective, asset growth with or without a profits constraint is also very important. Profitability does not seem ever, and particularly not currently, to have been a constraint. However, a new objective of minimising risk is currently the most important constraint for many banks; this being a relatively new phenomenon replacing asset growth or profit maximisation. The relative importance of minimising risk as a constraint in lending to LDCs is supported by the major risk as being the perceived lack of ability of the LDCs to service their debt.

The fact that profit has not been a serious constraint on bank lending to LDCs suggests that the supply function of loans has shifted to the right more rapidly than the demand function. This seems the appropriate interpretation given that for at least part of the 1970's spreads were falling and therefore growth of lending was accompanied by falling average revenue. This seems to rule out the suggestion that banks have positively sloped long run cost functions and that the increased lending resulted from shifts in the demand for loans. This is because spreads would have had to rise during the whole period under review.

The importance of asset growth for banks as a whole combined with the lack of a profits constraint during the 1970's indicates that bankers interpreted maximising profit as compatible with increasing assets in each time period. Therefore, with falling or zero marginal cost, the appropriate strategy in the absence of other constraints, was to lend more in each time period. With constant, positive marginal costs the appropriate strategy would be to lend, again in the absence of other constraints, until marginal cost equals marginal revenue in some future time period in long run profit maximisation. In either case it seems clear

that maximising profits in the period under review is compatible with balance sheet growth. However, there does seem to have been a constraint in addition to that of MC = MR or of minimum profits and that is a maximum acceptable level of perceived risk. It was suggested in chapter three that if this constraint rose, the quantity of lending would fall, ceteris paribus. The fact that the recent rise in risk minimisation is coinciding with a slowdown in lending to LDCs at a time when spreads are rising suggests risk and not profit are the major constraints upon balance sheet growth.

From this analysis the writer concluded that during the period 1970-1980 bank lending behaviour is best explained by a model where asset growth subject to a minimum level of profit or maximum level of risk is the relevant objective. This must throw some doubt upon the explanatory value of work on eurobank behaviour where the banks were assumed to be profit maximisers in the short term.

7.3 Section II of the survey

Methods of reducing risk in international bank lending and instability in loan markets

7.3.1 Reducing the debt service burden of interest payments

Question 6 asked if the bankers would like to see aid payments used to subsidise interest costs on bank loans to LDC borrowers. As expected, the majority (34 to 22) said 'yes' on the basis that such payments would make the banks' income from these loans somewhat more certain. However, there was a sizeable minority which were against such a subsidy. Even where the subsidies were favoured, the respondents generally thought that the payments should not be made without adequate control over the use of subsidised funds by the LDCs.

There was concern that subsidies would reduce risk differentials and thus hinder the market allocation of risk. Indeed some respondents considered that such a subsidy scheme could induce politically motivated

credit rationing. Furthermore, subsidising loans would not lift constraints such as capital adequacy, exposure limits, etc.

There were statistically significant differences in the responses from the US banks and the Other Overseas banks compared with the whole group. The majority of US banks (9 to 5) did not want subsidies on interest payments. On the other hand, the majority (17 to 4) of Other Overseas banks favoured such subsidies.

Question 7 aimed to determine the influence that any subsidy would have on increasing the supply of funds to LDCs. The answers to question 7i indicated that countries that are current borrowers would not receive more funds despite such a subsidy nor would countries which to date had not gained access to bank funds. However, for both cases there was a sizeable minority responding positively, 22 and 23 respectively.

There were statistically significant differences for Japanese banks, UK merchant banks and UK clearing banks compared with the responses as a whole. The Japanese banks responding were unanimous that such a subsidy would not increase the flow of finance. On the other hand, 5 out of 6 UK merchant banks and 3 out of 3 clearing banks responding suggested that the financial flow to existing LDC borrowers would be increased by such a subsidy.

Question 7ii regarding the use of the subsidy to allow LDCs to pay higher spreads got an overwhelming (37 to 10) negative response. Thus the suggestion of higher returns for higher risk does not seem on the face of it to be holding true. However, it must be remembered that spread is not a true measure of risk because during the late 1970's competition to lend compressed risk premia.

Generally the comments relating to question 7 were negative in nature, the common theme being that subsidising interest rates or spreads does not necessarily make the borrower creditworthy. High interest payments are only part of the borrower's problems.

It was suggested that the higher spread would not induce sufficient

additional risk bearing because the risk return trade-off only functions within a narrow band and bankers are generally risk averse.

The respondents that thought a subsidy would increase the financial flow to LDCs also noted that the subsidy would have to be in the form of additional aid and not a reallocation of the present aid budget.

Question 8 suggested a temporary IMF facility to help LDCs finance the balance of payments burden due to fluctuating interest rates. There was general support (32 to 23) for this suggestion but safeguards will be required to ensure that the system does not encourage a lack of discipline by eligible borrowers. Furthermore, there must be a fair method of calculating the normal rate of interest from which the deviation can be calculated.

Respondents showed concern for costs of administering such a scheme, the financial commitment of the IMF given recent volatility of interest rates and the ability to ensure that the facility was repaid when interest rates moved to more favourable levels. There was also concern about the LDCs dislike for IMF conditionality and therefore whether this facility would be popular with those countries, particularly as it may result in more interference by the IMF in their economies and even world financial markets.

If the IMF had to borrow the resources from the markets, directly or indirectly, it would exaggerate the volatility of interest rates by borrowing when rates are high and repaying when rates are low. It was also noted that for the long term viability of the scheme there should be no upward trend in interest rates. However this could be overcome by periodically redefining the normal rate of interest to reflect this trend.

There were no statistically significant differences between the responses from the subgroups of banks and the group as a whole to question 8.

There was an overwhelming negative response (46 to 8) to question 9 about the viability of index linking bank loans. Comments from the

respondents indicated that such loans would not be available until bank funding was put on the same basis. Additional comments suggested difficulties in choosing an index appropriate to international lending. Furthermore, indexing of loans would mean deferring a large element of the return from bank lending until final payment is received and in circumstances such as the present that is uncertain.

The bankers' attitude to subsidies etc on interest rates is that on their own they will not necessarily increase the flows of bank finance to LDCs. However, they may tip the balance in favour of more borrowings for some borrowers. Index linking of loans seems to be out for the present. However, some sort of interest cost specific facility from the IMF would seem to have support providing adequate safeguards and an appropriate formula for the "normal" rate of interest can be developed.

7.3.2 Debt restructuring

Question 10 was the first of seven about debt restructuring. Responses gave overwhelming support (39 to 15) to the suggestion that changing the maturity structure of debt is a legitimate aspect of debt management policy.

However, comments suggest restructuring of debt must be accompanied by economic adjustment policies aimed at balancing the external account. Furthermore, any restructuring should be by mutual agreement and not forced upon the banks as some suggest is happening at present.

It was recognised several times that some of the current restructuring results from lenders previously granting loans with a maturity profile inappropriate to the financing of economic development.

Question 11 about the desirability of restructuring the maturity structure of debt before a crisis looms received an even more definitely positive response; 46 to 8 with no statistically significant differences amongst the subgroups of banks. However, respondents thought that alternative economic policies should be tried before debt is restructured.

It was also frequently noted that a crisis concentrates the mind and that it may be difficult to get the parties to agree to changes in contractual terms without an air of crisis.

Question 12 asked the bankers to say which were the major costs to the banks of debt rescheduling. The most frequent answer, 34 out of 59 respondents, considered staff time, administrative and legal costs as the most important. This would suggest that any standardisation of procedures, say along the lines suggested in chapter six, page 281 above would help reduce these costs.

Other responses to question 12 suggested the following to be important: loss of opportunity in alternative uses of funds, loss of independence in determining the make-up of the loan portfolio and possible increase in funding costs, either by increased perceived risk by depositors, or increased competition for longer term loans.

The responses to question 13 showed majority support for a code of conduct for debt rescheduling. The positive respondents nevertheless did not want such a code to add respectability to rescheduling ie defaulting on loans. The negative respondents considered that:

- each rescheduling is different from others
- such a code would be difficult to enforce
- such a code would encourage default

Clearly the exact nature of such a code would be crucial. However, given the responses to question 12 about the resource costs of rescheduling, it is considered by the writer that further research into the most appropriate form of such a code of conduct should be undertaken.

Responses to question 14 did not generally favour representation for all types of creditors at the same rescheduling meeting. The negative responses emphasised the difficulty of reaching a satisfactory conclusion with so many different vested interests. This is particularly so where different creditors have different degrees of power eg official having more power than private creditors or banks having more power than the many

individual non bank creditors.

Positive responses, on the other hand, emphasised that a joint meeting of creditors would preclude the debtor playing off one group of creditors against another.

Note was also made of the fact that recent successful bank reschedulings had a steering committee of banks from various countries. Each member of the committee then had the duty to sell the decisions of the steering committee to the banks it represents. This could be extended to include representatives of senior non bank creditors who then had the responsibility to sell the decisions to the other non bank creditors.

The majority response to question 15 was that rescheduled debts still being serviced in accordance with the renegotiated terms should not be treated as inferior assets. However, some respondents wanted to differentiate between countries suffering what the lenders perceived as temporary difficulties from those countries that had more fundamental problems of debt servicing.

Responses to question 15i included increasing general bad debt provisions, writing down the book value to a level that would provide a buyer for the debt and just disclosing the quantity of rescheduled debt as a note in the published accounts.

Forty-six positive responses and only seven negative responses were received to question 16 about the increased willingness of banks to reschedule if the rescheduling is linked to IMF loan facilities. There were few comments, none of which added to our understanding of the advantages or disadvantages of such a link.

It is clear from the responses to the debt restructuring questions that the major costs to the banks were related to the resource costs of negotiation. It does, therefore, seem beneficial to both debtors and creditors for a streamlined negotiating procedure to be developed.

Furthermore, responses also suggest that restructuring of the maturity profile of the debt as the debtor's circumstances change is

acceptable at least to the lenders. Therefore there seems to be a prima facie case for representatives of the bankers and of the international organisations to enter into a continuous dialogue with debtor countries in order to develop an amortisation schedule that is continually adapted to meet changes in a country's expected foreign currency cash flow over the life of the debt. Given the greater willingness of banks to reschedule when that is tied to IMF conditional finance, such a continuous dialogue may be most productive if the IMF acts as the negotiating catalyst.

7.3.3 Improving the quality of information about LDCs

Question 17 was the first of six about the quality of information used in assessing the risks of lending to LDCs. The majority (43 to 11) thought that the information they possessed about the LDCs was not as good as that of the IMF or IBRD. However, comments suggested that at least some banks have access to IMF or IBRD data.

Responses to question 18 suggest that, despite the answers to question 17, the banks have adequate information for risk analysis.

Responses to question 18i indicate the following improvements would be welcomed by the banks:

- the LDCs to publish more regularly and more up to date figures
- statistics published in a common format
- greater exchange of information between IMF and IBRD and the banks
- more information about short term debt
- more information about the political and diplomatic activities of the borrowers.

Respondents to questions 18 and 18i emphasised the usefulness of a branch and/or personal visits as a way of supplementing published information.

Responses to question 19 indicated that the majority of bankers (42 to 13) considered that informational difficulties lead the LDCs towards poor economic and debt management policies. However, it must be noted that

in the comments some respondents did not want to generalise across all LDCs. Some respondents noted that the political cost of good policies, the political will or administrative ability to follow such policies, were often as important as the informational shortcomings.

Although the majority of respondents to question 20 (25 to 14) thought that better quality of information would not lead to greater lending to LDCs, the comments indicated that the actual outcome would depend on how different a picture the better information painted and how that information was used in economic policy making.

To an extent question 21 was unfortunately timed in that shortly after the questionnaire was despatched it was announced that an international institute was to be established, one of its objectives being similar to that suggested in question 21. The majority support, 44 to 12, for such an institution will be good news for its founders. However, some respondents cautioned that the institute must be independent of government and any particular group of banks. It was also noted by some that centralised information will not be a substitute for individual analysis and personal visits.

Some respondents thought that common information would reduce competition between the banks, noting that those banks that invest in a superior system of credit analysis reap a competitive advantage.

It was also thought that banks have followed the 'herd instinct' in recent years and such an institution may reinforce that instinct. If so, what would happen to international financial stability if the central institution downgraded one particular borrower? The stability of markets stems from a variety of views within that market. Reduce that variety and you reduce the stability.

Although the responses to question 22 about a system of credit rating for interbank and non bank borrowers, were finely balanced, 27 for and 29 against, all the comments were negative, the main theme being that banks cannot abrogate their responsibilities for credit analysis, particularly

as some have different risk criteria according to their objectives in the market place. Furthermore, the comments about market stability made in question 21 above are relevant to question 22.

The responses to questions 17 to 22 suggest that the banks have sufficient information for the purposes of risk analysis. However, the lending banks seem to think that informational shortcomings impact upon the LDCs policy achievements to a greater extent. If improved information allowed the LDCs to more easily achieve policy objectives compatible with being a lower credit risk, more finance is likely to be available to those countries.

It therefore seems useful to both debtors and creditors for the developing countries to construct, with the assistance of the banks and international financial institutions, better information systems as an aid to achieving policy objectives.

7.3.4 Co-financing with IBRD or similar international institutions

Responses to question 23 confirmed the advantages and disadvantages of co-financing suggested in the literature except that the supposed savings in risk analysis and loan administration were not supported. It was suggested that there would be a probable increase in the complexity of administration and that banks have little say in the documentation linking their loan to the IBRD one.

There were statistically significant differences in the responses to question 23a from US banks and other overseas banks. The majority of US banks responding 7 to 6 did not agree that co-financing reduced the risk of default. However, the majority of responses (19 to 1) from Other Overseas banks supported the suggestion of reduced risk. Moreover, 7 out of 12 US banks did not think that the IBRD was better at evaluating risk than they were. This view was supported by 3 out of 4 Other British banks.

Advantages additional to those cited in the question included better control over the destination of funds and the chance that principal may

escape rescheduling because of the established preference given by borrowers to IBRD loans. An additional disadvantage mentioned was that fee income may be reduced for the private banks.

One respondent made the interesting point that co-financing may force the banks into longer term restructuring of debt if the IBRD's attitudes towards the timescale of development differed from those of the private banks.

Question 24 about the ability of co-financing to increase the total private flow to LDCs was asked in two parts. These parts may have been mutually exclusive. However, many respondents did not interpret them that way. Moreover, lack of comment to these questions has not assisted in their interpretation.

Thus, although a majority of respondents to 24a (35 to 23) thought that co-financing would increase the flow of credit to LDCs, an even larger majority, 43 to 17, responding to part b suggested that existing levels of credit would be switched into co-financing.

Little help can be gleaned from responses to question 23 because, although co-financing was generally thought to be beneficial, co-financed loans also showed lower returns thus for example lower risk was matched by lower returns and therefore lending may not increase.

The responses to question 25 support the view that total lending may not increase because the majority, 34 to 17, suggested that increased co-financing would not result in flows to LDCs that to date have been considered too risky for private bank credit. The general theme of the comments to this question was that such countries should be financed on softer terms than those obtaining in the commercial markets. Furthermore, if there is any reduction in perceived risk by co-financing with the IBRD, this reduction may not be enough to bring the substantial risk of lending to these poorer countries within acceptable bounds. Much would depend upon how the risk was shared between the banks and the IBRD.

Clearly these responses go some way to explain why co-financing has

not increased as much as some would have liked. However, despite the negative response, it does appear that it may be fruitful for further research into an appropriate loan and risk bearing arrangement built around co-financing.

Although overall co-financing is seen, at least by a large proportion of bankers, as having some advantages, the impact upon increasing financial flows to LDCs is doubtful. In particular it does not seem to be a vehicle for facilitating increased private flows to the poorest LDCs.

7.3.5 Credit Insurance and Loan Guarantee Schemes

Six questions were asked about credit insurance and loan guarantee schemes beginning with question 26. A majority of 42 to 17 were in favour of extending independent guarantees to loans not currently covered by export credit insurance agencies. However many respondents were only in favour if the guarantors were governments sufficiently strong to be able to safeguard the banks in time of crisis.

Negative comments centred upon the credit rationing which could result for unguaranteed borrowers. Moreover, the reliance upon government or other official guarantees may blunt the bankers' critical judgement in evaluation of credit risks.

Furthermore, borrowers may show lack of discipline if the guarantor is a single state. The borrower may be able to bring political pressure to bear on the guarantor which it could not bring to bear on a market orientated group of institutions.

The majority of respondents (38 to 19) to question 27 did think that a system of guarantees would lead to less prudent lending. Comments qualified the 'yes' responses by adding 'unless the guarantees were only partial'.

Respondents also raised the question as to whether lending where the main chance of repayment is from the guarantor is less prudent than lending to a good credit risk and expecting repayment direct. The original

question was set in the belief that bankers do not lend money if they expect to have to enforce their security, a point confirmed by other respondents' comments.

There was a strong negative response to question 28 asking whether or not institutions such as ECGD in the UK should insure balance of payments loans to LDCs. The comments, all negative, suggest that such insurance would be expensive, that such agencies are instruments of national export promotion policy and with balance of payments finance insurance they would be helping the export industries of other countries.

Furthermore, when a borrower defaulted the creditor would claim off the insurance company who can only try to claim off the debtor while in the meantime refusing further insurance. There is no incentive for the banker to be flexible in relation to financing or restructuring the debtor's finances as his circumstances change, although the withdrawal of credit insurance may be a strong incentive not to default.

Sixty out of sixty-one respondents to question 29 expected insured loans to attract lower spreads. However, the reservations were that the insurer must be visibly stronger than the borrower and that there must be an acceptable minimum rate of return to cover all costs including bearing risk.

This is an important point because it means that the reduction in spread/fees may go some way to covering the insurance premium, if payable by the borrower.

Interestingly, comments also implied that the spread was a risk premium, yet responses to other questions in this survey and analysis elsewhere in this thesis (ref chapter four) suggest that the relationship between spread and risk is at times not very strong.

Responses to question 30 suggest that there would not be any tiering in the interbank market according to the proportion of uninsured loans in a bank's portfolio. The main reasons given were that the proportion of insured loans in a portfolio would only be one of several factors taken

into account in establishing interbank credit risk. Anyway, it was generally thought that such information would not be available. However, some respondents thought that if the information were to become available it would affect credit risk assessments.

Question 31 asked whether or not insured loans should be treated preferentially when the prudential authorities analyse the quality of banks' balance sheets. The response was almost balanced, 29 in favour and 26 against. Again the quality of the insurer was considered an influence. It was considered that the insurance could only be partially adequate if it only covered repayment of principal because the banks were concerned about the quality of earnings as well as the quality of assets. Again concern was expressed about the potential crowding out of uninsured lending.

Although the bankers would welcome a system of strong guarantees in their favour, the nature of the backing of the guarantees should be multinational when backing balance of payments loans and national when backing national export contracts.

Concern was expressed about the impact of a system of guarantees crowding out unguaranteed borrowers and dampening the bankers' risk analysis skills. It therefore seems probable that a system of guarantees will increase the flow of bank finance to those LDCs that benefit from loan guarantees. However, the same system could reduce flows to those countries not favoured by the guarantee system. Therefore, the extent to which a system of guarantees facilitates an increase in the flow of bank credit to LDCs depends upon how wide is the group of countries that are beneficiaries of guarantees.

The costs of extending insurance cover to the general balance of payments loans was considered prohibitive despite the suggestion that insured loans would attract lower spreads. The writer therefore concludes that the banks favour guarantees to insurance because the former will be provided without explicit cost to banker or borrower.

It was also noted that if the insurance company or the guaranteeing agency insisted on enforcing their rights against the defaulting debtor the debtor's ability to continue servicing debt may be reduced.

7.3.6 Prudential controls

Nine questions were asked relating to prudential controls.

The majority of respondents to question 32 thought that less stringently regulated banks did behave less prudently. However, there were reservations; the quality of the management was important and it was noted that some banks in stringently regulated areas eg USA, acted imprudently. The concept of imprudence was questioned noting that political factors may cause banks to assess risks differently. Furthermore, the relationship between the banks and their governments may influence standards in terms of capital adequacy and liquidity.

The standard of prudence depended less on regulation and more on local traditions, local standards of management and the intensity of supervision.

The majority of respondents to question 33 (45 to 12) thought that differences in national regulations influenced their willingness to lend to banks in less stringently regulated countries. However, again there were qualifications. A weak balance sheet made a borrowing bank a poor risk however well regulated. The quality of management and of balance sheet were more important than stringency of regulation.

Question 34 asked about the influence of different regulations upon the price different banks paid for interbank money. The majority of respondents (36 to 12) suggested that banks in less well regulated locations paid more for such funds. However, although that may generally be so, respondents also noted that the bank's reputation was more important than location and that in respect of reputation, bank ownership was very important.

Responses to question 35 about the influence of national prudential

regulations upon banks' decisions to locate abroad were finely balanced, 26 respondents thought that such regulations did influence location, 27 respondents said that they did not.

The positive responses emphasised the banks' liking for orderly markets. The negative responses emphasised that the banks' internal attitudes to prudence were unlikely to be exceeded by local regulation. However, if all banks thought that way one would have to ask why prudential regulations were required.

Question 36 asked whether the bank supervising a particular branch is morally bound to be lender of last resort to that bank. Thirty-one respondents thought not, while 26 thought that the supervisory and lender of last resort functions were synonymous.

The attitudes gleaned from the comments suggest that locally incorporated organisations are more entitled to lender of last resort facilities than branches of foreign banks. There was support for the lender of last resort facility if the disturbance occurred within the country in question and less or no support if the disturbance came from outside.

It was thought by some that the head office supervisory authority was the most appropriate lender of last resort. If the local authority does not ensure that the head office authority will provide such facilities then that local authority should provide them if it provides such facilities for local banks.

The group as a whole responded to question 37a by suggesting that the decline in the capital asset ratios in recent years was not the result of a learning process; 38 'no' and 10 'yes'. However, 6 out of 15 US banks thought that the decline was because of a learning process. Two out of 3 UK clearing banks and 5 out of 6 UK merchant banks responded in similar vein.

The responses of question 37b suggest that the decline in capital asset ratios has been forced upon the bank by competition. The subgroups

for US banks, UK clearing banks and UK merchant banks responded in similar vein as the whole group.

At first sight there seems to be an inconsistency between the responses to question 37a and 37b. However, this is resolved when it is suggested that competition has forced the banks to learn how to be more efficient in the use of capital. This would be particularly so if the banks have been forced to compete for new business but at the same time have been deprived of new capital from the major capital markets.

For the UK registered institutions, respondents have suggested that recently introduced capital adequacy guidelines have allowed them to reduce their capital asset ratios.

The overwhelming response (37 to 12) to question 38 was that capital asset ratios will not continue to fall. However, some respondents suggested that the fall will continue in the short run, say up to two years, and then reverse itself. Other respondents felt that the decline may continue depending upon how much involuntary lending (rescheduling) there is in the future. Yet others felt that cooperation between the regulatory authorities had ensured that capital asset ratios were currently at their minimum.

Question 39 received an overwhelming positive response (46 to 6) to the suggestion that a further decline in capital asset ratios would be detrimental to the stability of the banking system. There were few comments to the responses.

The responses to question 40 suggest that the bankers perceive their optimum capital to assets ratio as between 1:25 and 1:10. The majority (13 out of 21 respondents) suggested 1:20.

With respect to the responses regarding prudential regulation, it would seem that it is better in terms of other bankers' perceptions of risk to come from a stringently regulated area but a bank cannot assume that because it is in a stringently regulated area that its reputation will not be strongly influenced by other factors.

With respect to capital asset ratios it seems clear that competition and lack of access to capital markets have caused such a decline. However, at least for US banks, UK clearing and merchant banks there has been a learning process allowing the banks to be more efficient in their use of capital resources.

Having said that, it is generally thought that currently capital asset ratios are as low as is commensurate with stability of the international banking system.

The general view regarding lender of last resort facilities is that the head office supervisory authority should be responsible for such facilities to branches in foreign centres. However, the bankers consider that the local supervisory authority should concern itself with the liquidity of branches of foreign banks.

Clearly the movements towards uniformity of regulatory environment between countries would seem to have majority support within the banking community because it is seen by the bankers as being beneficial to themselves.

7.3.7 International lender of last resort

Question 41, the first of four questions about an international lender of last resort, showed very strong support for such an institution (37 to 21). Yet responses to question 42 indicated that the most popular form would be national central banks providing such facilities to the worldwide business of banks registered in their jurisdiction. The establishment of a supra-national organisation was the second most popular choice. There was little support for systems utilising formal lines of credit between institutions.

Respondents that disagreed with the introduction of a lender of last resort frequently suggested that such a facility will lead to carefree banking practices and a deterioration in debt management by borrowers. In effect the facility was seen as analogous to a guarantee. Some bankers did

not like the idea of increased bureaucracy which such a facility may bring particularly as all banks, good, bad or indifferent, would be treated equally. Furthermore, some respondents suggested that there should be conditions attached to such a facility, or the extent of the facility should be kept secret and should not be aimed at bailing out the bank's management. It was thought that the extent to which a lender of last resort facility reduced the risk to bank management was a bad thing - for risk concentrates the mind.

The majority of respondents (23 to 6) to question 43 suggested that even though the first three forms of facility suggested in question 42 were cost free to the banks, their implementation would not give rise to a greater proportion of high risk lending. It was particularly emphasised that such additional high risk lending will not arise if the central banks have an adequate system of supervision.

No alternative structures of lender of last resort facilities were suggested in response to question 44.

Clearly the banking community would like some form of lender of last resort facility to protect depositors and meet crises of liquidity. However, generally they do not wish to see the risks of banking removed. In this respect some reticence by the central banks in publishing the terms under which the facility will be granted was welcomed.

The fact that such a facility was to be made available in a crisis does not preclude the central banks from maintaining vigilant supervision over the activities of the banks within their jurisdiction.

Responses to this section are corroborated by the responses to question 36 in that the majority of bankers prefer the lender of last resort facility of a head office supervisory authority to the worldwide business of banks registered in its jurisdiction.

However, given the comments to question 36 that local central banks should supervise liquidity, the responsibilities of the head office supervisory authorities as lenders of last resort would seem, logically,

to be limited to the eurocurrency business of foreign branches. This however may still impose considerable foreign exchange problems for a central bank of a small to medium sized country. Therefore international cooperation and lines of credit between central banks would be required if such a system was to be strong enough to withstand any substantial shock.

7.3.8 Miscellaneous questions

Question 45 was the first of five miscellaneous questions and referred to bank deposit insurance. The majority of respondents (42 to 16) were in favour of such insurance but only for private depositors. The majority (33 to 18) thought such insurance was inappropriate for foreign currency deposits and deposits in overseas branches. Furthermore, 45 out of 52 respondents thought that interbank deposits should not be covered.

The comments indicated that the respondents considered deposit insurance was to protect the unsophisticated depositor thus the emphasis upon small domestic depositors. The financial institutions should be able to make their own credit assessment of the bank where they intend to deposit funds. Furthermore they should be able to diversify their deposits - something that the average personal depositor will find it difficult to do.

The negative responses suggest that adequate supervision and the lender of last resort facility should be sufficient. Moreover, the insurance should not cover business at foreign branches because foreign customs and regulations cannot be controlled.

Question 46 related the desirability of floating rate spreads and a deeper secondary market in syndicated loans. This question was asked in the form that it was because the writer thought that a deeper secondary market required floating spreads. Some of the bankers thought otherwise; fortunately those bankers generally answered question 46 in two parts. There was a favourable response to a deeper secondary market although likely to be sometime before it became much deeper than it is at present.

Indeed it will need a return to more confidence in financial markets generally. However, the response to floating spreads was unfavourable, mainly on the grounds of the additional administrative costs involved. It was suggested that floating rate spread would require a minimum threshold.

Question 47 attempted to gain some idea of the bankers' perception of the characteristics of a wider secondary market in loan participations. As a catalyst for the responses the Floating Rate Note Market was used as a comparison. The respondents noted that the loan participation was not a negotiable instrument whereas the FRN is treated as such. Therefore complicated documentation would be required in transferring loan participations. This would tend to limit the size of the market. Because of the difference in negotiability the two instruments would be treated differently in bank balance sheets. In particular selling a participation may not rid the selling bank of default risk if the LDC should default. In some cases the borrowers' permission is required to sell participations in a loan.

It was noted that FRNs were designed to appeal to non bank lenders. Bank loans on the other hand were designed to develop a banker-customer relationship in many cases with its attendant fee earning business. Thus the instrument will be different. The sub-participation market was thought to be only an interbank market.

Question 48 aimed at eliciting how the banks perceived the use of a secondary market in loans in helping them diversify their loan portfolios. A large majority thought that it would be helpful. Many respondents thought that 'yes' was the obvious response to this question. In fact it was not because of the 'herd instinct' in bankers; if one banker wanted to diversify out of one country's loans there is a good chance that others would want to as well. The result would be difficulty in selling such a participation at an acceptable price and possibly no further diversification.

Respondents also noted that the original lending was part of a

portfolio diversification exercise so that selling sub-participations may not significantly reduce the overall portfolio risk. Indeed unless there are new entrants to the market it may be difficult to sell participations if the constraints of exposure limit and capital adequacy bite as suggested in question 1.

However, one advantage of such a market was seen to be the realistic valuation of rescheduled loans.

There was a statistically significant response to this question by the Other British banks. All of them thought that a deeper secondary market would not assist portfolio diversification.

Question 49 asked whether a deeper secondary market would widen the participation in LDC loans to a) banks who have not loaned to date and b) to non bank financial intermediaries. Both questions had small majorities in favour, 49a (28 to 24) and 49b (30 to 23). There were a few comments that both developments but especially 49b would be undesirable, but there were also comments with the opposite attitude.

From the responses to questions 46-49 it would seem that a deeper secondary market in loan participations may be beneficial to the banks and the LDC borrowers. However the level of benefit is far from certain. Therefore, it is considered by this writer, that further research is required into the economic, legal and practical administrative aspects of expanding this market.

7.4 Conclusions from the survey

The major constraints upon the further supply of bank finance to the LDCs seem to be doubts about debt servicing capacity, capital adequacy and exposure limits. To the extent that the borrowers' servicing of debt, the banks' ability to raise capital and willingness to increase exposure limits are all related, adjustment of LDCs' deficits will be an important influence on the flow of private funds to those countries.

Adjustment does not have to be by the LDCs alone. As the global

deficit should sum to zero, some adjustment by the surplus countries may actually increase world financial stability by reducing the perceived risk of lending to LDCs. However, note must be made of the potential crowding out of LDC borrowers as demand from OECD based borrowers increases.

However, to the extent that the banks' corporate objectives in lending to LDCs include incremental profits, asset growth, servicing export customers' needs, developing new markets and risk minimisation, banks will probably continue to be willing to lend to LDCs provided that the risk is at an acceptable level.

As perceived risk is going to be such an important influence on the flows of bank finance to LDCs, it is not surprising that no single suggestion for reducing that risk has emerged as a panacea for risk reduction. Therefore a combination of measures suggested is required.

There was substantial support for restructuring the maturity profile of debt provided it was carried out on a voluntary basis from the banks' point of view. It is therefore considered that an urgent review of the maturity structure of the debt of the LDCs should be carried out with a view to renegotiating a maturity structure more appropriate to the economic development prospects of the borrowers.

To complement this review, action should be taken to improve the quality of information about the LDCs that flows to the banks and the borrowing governments themselves.

There must also be an improvement in the debt management function of the borrowers so that bunching of maturities is avoided and the maturity profile of the debt is made flexible in order to accommodate changes in economic circumstances. Appropriate debt management should then make refinancing increasingly frequent and rescheduling less so. There is some support for a code of conduct for rescheduling. The implementation of such a code, in an appropriate manner, will reduce the resource costs associated with negotiations. However, further research into the nature of this code is required.

Subsidising interest rates by itself will not substantially increase the flow to developing countries although new aid aimed at assisting the debt service burden of interest payments would be helpful.

As a matter of urgency a system for financing the unanticipated increase in interest servicing costs due to rising market rates of interest must be established. The suggestion of establishing an IMF facility for such a purpose finds support from those surveyed. The use of an IMF facility is particularly appropriate as the majority of its resources come from the developed countries. The increased interest costs on LDC loans results, in part, from the impact of domestic economic policy in these richer countries upon the level of interest rates in the world's financial markets. It is therefore only equitable that some of the burden of the increased cost be borne by those that cause it.

There are administrative and definitional problems to overcome but the IMF does have experience in running a similar facility for export shortfalls and the increased costs of cereal imports.

Co-financing with development banks in the most common forms of the 1970's does not seem to have been popular and therefore it is unlikely to be a major force increasing flows to LDCs in the 1980's. However, we must note that the recent linking of the IBRD with commercial banks in syndicated loans may prove to be promising and it is considered that more research should be carried out into the most appropriate relationship between the commercial banks and the development banks.

Guarantees would increase the flow of bank finance to those countries that are guaranteed provided that the guarantors were the governments, preferably acting in concert, of the richer industrial countries. Therefore to increase the flow to LDCs as a group, guarantees would have to be available to all potential LDC borrowers otherwise unguaranteed LDCs would be crowded out of the market.

It may be that guarantees could be used in conjunction with the restructuring of the maturity profile of the debt. In particular, in order

to encourage the banks to reschedule to an appropriate maturity, the guarantees may cover only the later years of the debt's life. The guarantee would have to cover interest and principal. Thus the combination of a guarantee over the later years of a debt, together with the reduced annual amortisation payments and thus reduced annual debt service burden, should reduce the risk of lending and thus increase the flow of bank finance to those countries that obtain the guarantees and restructure their debt.

The great weakness of combining guarantees with debt rescheduling is that the largest borrowers will need the largest guarantees. Yet it is the richest LDCs which have borrowed most and therefore if these guarantees are viewed in the same vein as aid, the richest countries will be seen as receiving the greatest amount of aid. This problem is really a political one in that the government guarantors may not wish to be seen providing additional aid to the richer LDCs. However, they are indeed already doing just that via their export credit insurance agencies.

Furthermore, the distribution of credit will be determined largely by the distribution of guarantees. This distribution is likely to be political. If the guarantor governments do not wish to be seen guaranteeing the richest LDCs, these countries may be crowded out of private markets thus exacerbating their current financial situation.

It is clear therefore that the suggestion that loan guarantees be used to encourage the restructuring of LDC external debt is only viable if the guarantees are available to all LDC borrowers. Moreover, the distribution of future guarantees should be flexible enough to ensure that countries not currently accessing the bank credit market will be able to if private external finance is an appropriate form of finance for them in the future.

If the combination of debt restructuring and guarantees reduces the bankers' perceived risk of lending to LDCs, the incremental profit and asset growth objectives will ensure the bank funds will flow to the LDCs

unless crowded out by the increased demand for credit from OECD countries. To avoid this crowding out, it will probably be necessary for the LDCs to pay higher spreads to make such lending more attractive to the banks.

Although the above suggestions concentrate on reducing the risk and increasing the reward of bank lending the risks of deposit taking must also be reduced. In this respect greater uniformity of prudential regulation and the uniform provision of deposit insurance would be welcomed by the bankers. These provisions would therefore reduce those bankers' perceived risk in deposit taking.

Chapter 8

THE EUROBOND MARKET AND DEVELOPING COUNTRIES

8.1 Introduction

Developing countries receive finance from bond markets in two ways; either directly by issuing bonds themselves or indirectly by borrowing from supranational organisations which tap the bond markets. Such organisations include the IBRD. This chapter is only concerned with the direct access of developing countries to the bond markets, and to the eurobond market in particular.

There are in fact two types of international bond market. One is the so-called foreign bond market where a bond is issued by a non-resident in one market only and denominated in the currency of that market. The other is the eurobond market where the bond issue is made in several centres simultaneously and the bond is not denominated in the currency of any of those markets. An example of a foreign bond would be one issued by, say, a developing country in London and denominated in sterling. An example of a eurobond would be one issued by, say, a developing country in several European centres but denominated in US dollars.

In order to put the size of the international bond market into perspective, the following figures compare total international (euro) bond and foreign bond issues with the total of medium and long term bank credits.

Table 8.1 Comparison of volume of bond issues and bank loans

	Medium and Long-term Credits	International Bonds	Foreign Bonds	Total
1973	20.83	4.70	5.35	30.88
1974	28.54	4.51	7.72	40.77
1975	20.58	10.52	12.30	43.40
1976	27.92	15.37	18.94	62.23
1977	33.78	19.48	16.61	69.87
1978	66.00	15.93	21.54	103.47
1979	78.26	17.36	19.98	115.60
1980	78.04	20.48	17.46	115.98

Source: OECD Financial Statistics US $ billions

It is clear that the growth of the bond markets has not kept pace with the growth of bank lending. Moreover, the following table extracted from World Bank publications shows that the growth of bond finance to developing countries has grown even more slowly and that such finance is only available to the richer LDCs.

Table 8.2

International Bond Disbursements to LDCs

	Upper Middle Income	Intermed Middle Income	Lower Middle Income	Low Income	Total
1973	508.0	451.3	36.5	-	995.8
1974	283.6	482.9	32.7	-	799.2
1975	431.2	410.5	52.5	-	894.2
1976	244.5	1016.7	379.6	-	1640.8
1977	729.2	2757.5	234.1	-	3720.8
1978	384.0	2868.8	451.3	-	3704.1
1979	424.9	1478.6	204.1	-	2107.6

Source: IBRD World Debt Tables, various issues

Figures in millions US $

It is also instructive at this stage to note the currencies of denomination of the types of bonds issued. The following figures show how the relative importance of various currencies has changed during the 1970's for the aggregate of international bond issues.

Table 8.3

Major Currencies used in bond issues 1971 and 1980

	1971 %	1980 %
US dollar	50.7	42.4
European currencies	36.0	51.1
Deutschemark	15.8	22.3
Swiss franc	10.8	19.8
Netherlands guilder	4.3	2.3
Pound sterling	2.5	3.0
Belgium/Luxembourg franc	1.4	0.7
French franc	1.2	3.0
Yen	4.2	5.0
OPEC currencies	1.2	0.5
Units of account	3.3	0.3
Other	4.6	0.7
TOTAL	100.0	100.0

Source: OECD Financial Statistics

These figures, although showing a declining importance for the US dollar and the rising importance of European currencies, hide differences in the relative importance of currencies between eurobonds and foreign bonds. The following figures for 1980 extracted from World Financial Markets published by Morgan Guarantee Trust Company of New York shed some light upon these differences.

Table 8.4 Dominant currencies in the eurobond and foreign bond markets in 1980

Eurobond US $	51.6
Eurobond DM	37.2
Foreign bonds US $	28.7
Foreign bonds Swiss Franc	28.3
Foreign bonds DM	18.8
Foreign bonds Yen	19.0

These figures show that the US dollar is still dominant in the eurobond market but European currencies have a much greater dominance in the foreign bond markets.

The figures on page 364 above also show that the proportion of bond finance going to developing countries is small and that only the richer countries have been able to avail themselves of this finance. In analysing the reasons why developing countries have not received a larger proportion of their finance from the bond markets, it is fruitful to analyse the nature of the eurobond market and the nature of the eurobond instrument.

However, in this analysis the writer has been hindered by the lack of data, particularly relating to bond investors and to the size of the secondary market. These data weaknesses stem directly from the uncontrolled nature of the market and the bearer nature of the eurobond instruments. The next two sections therefore establish the theoretical principles of the eurobond market and eurobond instrument which would influence the ability of the developing countries to access that market. These principles are tested in the last section by analysing the responses to a questionnaire sent by the writer to the major managers of eurobond syndicates in London.

8.2 The Nature of the Eurobond Market

The Primary Market

The eurobond market in fact consists of two distinct components: the primary market where new bonds are first issued to investors and the secondary market, where existing bonds are traded.

New bonds are issued by a syndicate of institutions on behalf of the borrower. The syndicate will consist of:

1) the lead manager
2) the co-manager
3) the underwriter
4) the selling group

The lead manager will be a major eurobank who has secured the mandate from the borrower to raise the finance.

The co-managers will be selected by the lead manager because they are substantial institutions, are market makers in the secondary market for the type of security in question, or have substantial placing power. There are often 5-10 co-managers to an issue and together with the lead managers they form the management group.

The underwriters are substantial banks selected for their placing power of bond issues or on the basis of reciprocity with members of the management group.

The selling group will consist of smaller institutions which are trying to prove their placing power in order to pave the way to their becoming underwriters.

Generally the lead and co-managers are also members of the selling and underwriting groups in that they also place bonds.

The bonds are placed with the institutions' customers so that banks with a substantial discretionary investment management business have strong placing power. The Swiss banks are substantial placers for this reason.

As a consequence of this placing technique, most bonds are owned by individuals or institutions that are not financial intermediaries eg trusts or pension funds. Unfortunately, because eurobonds are bearer instruments, no data are available as to who are the investors in such instruments.

Where the investors are institutions they are frequently restricted, by official regulation, as to the quantity of foreign securities in their portfolios (Ahmad 1976).

The view that the majority of investors in new bond issues are individuals or restricted institutions is the explanation suggested by some commentators (Ahmad, op cit; Einzig, 1969 p197; Scott Quinn, 1975 p221) for the small proportion of bonds being issued by developing countries.

This explanation suggests that the market is dominated by individuals who do not have the ability to carry out appropriate risk analysis and that these individuals are risk averse. However, the same explanation is compatible with the view that the market is dominated by investors, individual or institutional, which do carry out the appropriate risk analysis but perceive the risks to be too great. Both these suggestions are tested in the questionnaire.

If the eurobond market were dominated by sophisticated individual and institutional investors, why is it that one group of institutions, financial intermediaries, have invested substantially in developing country liabilities - the syndicated loan?

The answer to this question may be found in the differing attitudes to investment by a financial intermediary on one hand and a wealth holder on the other. It is the nature of the function of the financial intermediary to take on the role of risk transformation and maturity transformation and it earns its reward for fulfilling these roles amongst others. Both these functions of a financial intermediary assist in meeting the requirements of savers and those of borrowers. In

particular the role of risk transformation ie transforming risky assets (loans) into riskless liabilities (deposits) satisfies the savers' desire for a risk-free store of wealth, while providing the borrower with finance for a risky project (Bain 1981, p50).

The fact that risk transformation does not take place via an intermediary in the bond market will result in an unsatisfied demand for credit for risky projects.

The financial intermediary can only continue its function and thus earn an income if it has a stream of potential savers and borrowers. However, considerable maturity transformation is typical of this intermediating process. Thus, the turnover of deposits is likely to be greater than that of loans. It is essential therefore that financial intermediaries maintain a flow of deposits. One important influence on the size of that flow will be the rate of interest paid on deposits. It seems reasonable to assume therefore that financial intermediaries are more concerned with certainty of income than certainty of principal. In the extreme it does not matter whether a loan is repaid as long as sufficient interest earnings accrue in order to pay a sufficiently high rate of interest so as to ensure a flow of deposits to fund the loan, (refer chapter six, page 271 for a more detailed account of this argument).

Of course when a borrower defaults income and principal are lost. However, as chapter six, page 270 has shown, banks are eager to avoid outright default by engaging in lengthy rescheduling programmes. They are in effect delaying repayment of principal in return for continuity of income.

The bond market investor, on the other hand, does not carry out the functions of a financial intermediary. He is not rewarded for carrying out risk and maturity transformation. We would therefore expect the typical bond market investor to be relatively more risk averse than a financial intermediary. Thus we would expect bondholders to be relatively

less important investors in assets of a risky nature such as LDC eurobonds.

Finally, it should be realised that the number of investors in a typical eurobond issue will be more numerous than the members of a eurocurrency loan syndicate. Furthermore, many investors are attracted by the anonymity provided by the bearer nature of the eurobond instrument. Given these circumstances any concerted renegotiation of eurobond investment becomes almost impossible. This in itself increases the risks to the eurobond investor because the terms of the bond issue cannot be changed as the borrower's financial circumstances change. This reduced flexibility of bonds compared with say bank finance increases the chances of default within the terms of the bond agreement.

The Secondary Market

Most eurobond issues are listed on a stock exchange such as London or Luxembourg. However, very little trading goes on via these exchanges. The majority of trading transactions in existing eurobond securities take place in the Secondary Market. This market is truly international, the trading being carried on via telephones and telexes around the world.

Some operators in the market are dealers operating on behalf of buyers and sellers. Other operators, usually banks or investment institutions, trade on their own account. They hold a position in bonds and act as market makers, being willing to buy and sell at certain prices. The activities of these market makers ensure that investors can resell their bonds, albeit at the market price, should funds be required before the bonds mature. Thus the secondary market provides a degree of liquidity to what may otherwise be an illiquid investment.

Since liquidity is a factor in favour of any investment, the attitude of financial institutions to market making in developing country bonds is an important influence in the ability to issue such bonds.

The size of the secondary market is very important in this respect.

The market makers are analogous to the members of the London Discount Market in that they suffer considerable fluctuations in the book value of their portfolios as interest rates change. Yet the eurobond market makers have no lender of last resort as such. Thus market making is more risky, this risk being evidenced by higher bid-offer spreads and thus greater capital value fluctuations for the investors.

Furthermore, because of the riskiness of acting as a market maker, the secondary market is smaller than it otherwise would be. This factor alone increases the price fluctuations resulting from a given sale by an investor.

This situation is exacerbated with regard to LDC bonds because the secondary market in these bonds is somewhat limited. In several instances secondary market yield fluctuations have been markedly more pronounced in the LDC compartment than elsewhere (OECD June 1977, p78).

It is therefore postulated that if the secondary market in developing country bonds is small, this will contribute to the lack of popularity of such bonds. In particular the lack of liquidity provided by a deep secondary market will increase the risk of a forced sale disproportionately influencing the price against the seller.

Nevertheless, it is also realised that the lack of a deep secondary market may be caused by the relatively small volume of new issues by developing countries, and the small size of those issues that are made.

8.3 The Nature of a Eurobond

Bonds issued by developing countries have either been fixed interest (straight debt) or variable interest (floating rate debt) instruments. Floating rate instruments have become increasingly popular accounting for 10.9% of all eurobond issues in 1970 and 19.1% of such issues in 1978 (Fisher 1979, p142). However, the majority of bonds issued are in the form of straight debt.

Another feature of eurobonds is that they tend to be long term

instruments with maturities ranging from five to twenty years.

A third feature is that for many investors in eurobonds the bonds are a foreign currency investment with the attendant problems of foreign exchange risk.

A useful understanding of the causes of the relatively small role of the bond market can be gained by comparing the eurobond as a borrowing and investing instrument with the eurocurrency syndicated loan and eurocurrency deposit markets.

Taking first the fixed interest nature of the majority of debt issued: prices of fixed interest debt fluctuate widely as a result of interest rate changes. In particular the volatility will be greater for a given change in interest rates a) the lower the coupon rate or b) the longer the maturity. Thus if investors took a long view that interest rates were going to rise, they would expect to incur capital losses on straight debt if sold before maturity. If expectations of rising future interest rates dominated market thinking the demand for fixed interest rate instruments would be small.

The fixed rate nature of most eurobonds means that borrowers also have to take a long view of interest rates. They may find themselves locked into paying historically high rates of interest, the only relief coming from any purchase fund or sinking fund arrangements or any call provision.

Assuming that both investors and borrowers are risk averse in relation to unforeseen interest rate changes, both would prefer floating rate instruments to ones bearing fixed rates of interest. We can postulate, therefore, that during periods of secularly rising interest rates, investors will be less willing to buy fixed rate bonds.

For many investors a eurobond is a foreign currency investment and the demand for that investment will be influenced by the investors' expectations of future exchange rates. It must be remembered that for most investors, whether individual or institutional, trading in foreign

currencies is not in the ordinary course of their business. Given the long term nature of most eurobonds, the investors have to bear the foreign exchange exposure risk because the forward exchange markets are too thin at the longer maturities.

It is assumed that borrowers do not face such exposure because they borrow in a currency in which they expect to earn revenues.

On the other hand loans provided by banks can be funded from the eurocurrency interbank market. This market enables the banks to obtain foreign currency ie eurocurrency funds for their foreign currency lending. Thus, for the banks, eurocurrency lending does not of itself imply foreign currency exposure risk.

Some indication of the influence of exchange rates over investors may be gleaned from the declining role of the US dollar in denominating bonds. OECD figures (Financial Market Trends, November 198 , p97) show that the US dollar was used in 82.8% of eurobond issues at the end of the 1960's but this declined to 54.2% at the end of the 1970's. In contrast the importance of the German Mark rose from 13.4% to 33.6% of new issues over the same period.

It is suggested therefore that the foreign currency nature of the eurobond investment adds the additional risk to the investor of foreign exchange risk and that this additional risk deters investors. However, this only explains the smaller size of the eurobank market generally and not the small amount of bond finance going to LDCs. However, the small size of the bond market generally will mean that pro rata only limited finance is available to LDCs.

Questions relating to the interest rate risk and foreign currency risk are included in section three of the questionnaire.

Note has already been made of the different risk borne by intermediating and non intermediating investors. The importance of this can be seen in the period after the 1973 oil price rise. OPEC members with substantial US dollar funds required short term liquid investments

while borrowers with structural disequilibrium on their balance of payment required long term funds. It was natural for the banking system to carry out the required risk and maturity transformation in order to meet the requirements of both borrowers and lenders.

The bond markets on the other hand did not satisfy the OPEC investors' requirements of short maturities. Furthermore, the interest rate risk associated with the fixed interest bonds and the default risk did not satisfy their requirements of capital certainty.

The fixed interest nature of the majority of LDC eurobonds precluded the banks in receipt of OPEC funds from investing in the LDC bonds. Firstly there was the interest rate risk but also the fact that the fixed interest rate portfolio of bonds would be funded from deposits bearing variable (floating) rates of interest. Thus, there is a risk that the revenue from the portfolio of bonds would be less than the costs of funding that portfolio. Therefore the banks used the OPEC deposits to fund floating rate syndicated loans.

In addition to the long term view of interest rates which borrowers in the bond market must take, there are also administrative factors which may deter some. One such factor is the use of a credit rating. Another is the administrative costs of a bond issue. These latter are in addition to any front-end fees that may be payable.

Taking the case of the credit rating first, there are three rating agencies located in the United States: Moody's Investors Services Inc, Standard & Poor's Corporation and Fitch Investors Services Inc. The first two of these are more important and have relatively wide experience in rating issues of foreign borrowers (Fisher 1979). Because the lack of a rating is interpreted as a poor rating, eurobond issuers find it worthwhile, in terms of interest rate savings, to obtain a rating for the issue. On the other hand, there is evidence in the US foreign bond market that developing country issuers have preferred not to obtain a rating rather than be given one that is not triple A, the top rating.

Accordingly these countries have had to pay higher coupons, (Fisher 1979, op cit). The costs of obtaining a rating and the fact that developing countries may not get top rating may deter sovereign borrowers from using the eurobond market.

Turning next to the costs associated with a bond issue but not with a syndicated loan, the credit rating could cost up to US $25000, printing of bonds and prospectuses US $60000, Stock Exchange listing US $10300, authentication of bonds US $7000. (These figures were extracted from Fisher, op cit, and relate to a 50 million dollar bond issue.)

On top of these costs there are front-end fees which according to Fisher are standard in the eurobond market at 2% for maturities up to five years, 2.25% for maturities five to seven years and 2.50% for maturities ten years and over. Mendelsohn (1980) gives the following fees for euro and foreign bonds of various types:

Table 8.5 Fees on euro and foreign bond issues

Eurobonds	2 - 2½%
New York Foreign Bonds	⅞ - 1%
Yen Foreign Bonds	2%
DM Foreign Bonds	1¾- 2¼%
Dutch Foreign Bonds	2½%
Swiss Foreign Bonds	4%

These figures for front-end fees compare unfavourably with such fees paid by Brazil, one of the more frequent LDC borrowers on the bond market, of less than ½%.

As well as these technical factors, the ability of developing countries to tap various foreign bond markets has been influenced by the attitudes of the regulatory authorities for each foreign bond market. Such attitudes have even influenced eurobond issues. These regulations were aimed at a) reducing the internationalisation of a particular currency, particularly during periods of weakness, or b) to restrict capital inflows during periods of currency appreciation.

Reducing the internationalisation of a currency was desired by some countries eg Germany and Japan, because otherwise "..... transactions on the foreign exchange markets and capital markets ..... may be disproportionate to the size of their economies", (OECD November 1980, p102).

Policies aimed at reducing inflows had the effect of reducing the pool of investors' funds and thus the demand for a particular bond issue. The role of these markets as a source of finance for developing countries was therefore reduced. These controls, generally in the non US dollar bond markets, were applied at various times during the 1970's. This was a time when the popularity of the US dollar both with investors and with borrowers was waning. Therefore the ability of these other markets to make up for the shortcomings of US dollar markets must have been restricted.

Where these regulations have not influenced the eurobond market directly they may have had an indirect influence. In particular, these regulations have limited the experience which investors have been able to gain of LDC bond issues. Because of this lack of experience they may perceive the credit risk to be greater than it actually is.

This section explains why the eurobond in general has not been as popular a credit instrument as the eurocurrency syndicated loan as indicated by the figures given on page 364 above. The significance of this reduced general popularity in explaining the limited access of the LDCs to the eurobond market lies in the fact that the smaller the total demand for eurobonds, the smaller will be the quantity available to LDCs from that source, ceteris paribus.

8.4 The Questionnaire

It can be seen from the previous two sections that the nature of the primary and secondary bond markets will have a strong influence on the ability of the developing countries to access those markets. In

particular the nature of the investors, their perception of the risk associated with lending to developing countries and investors' attitudes to risk are important. Moreover, the depth of the secondary market in developing country bonds will influence the attractiveness of new issues of those bonds.

It is also clear that the fixed interest rate nature of most eurobond issues, the foreign exchange risk, and the long term maturity of many issues should theoretically influence investors' willingness to take eurobonds generally. Widely recognised standard credit ratings and transactions' costs may also influence borrowers' willingness to issue such bonds. Any factors that reduce the overall size of the eurobond market will, ceteris paribus, restrict the access of LDCs to bond finance. Therefore, the questionnaire was composed of five sections. Section one consisted of one composite question in four parts enquiring to what extent the nature of the market and its participants or the nature of eurobond instruments were the reasons for the limited access of LDCs to the eurobond market.

Section two consisted of six questions, two relating to the type of eurobond investor, two about the thinness of the secondary markets, one about the reluctance of LDC governments to obtain credit ratings and an open-ended question about other aspects of the eurobond market that limited the access of LDCs to that market.

Section three asked six questions about the nature of the eurobond instrument. Three questions related to exchange risk and interest rate risk of eurobonds, two questions related to the costs of eurobond issues and one question was open-ended and enquired of any other factors about the instrument that limited the access of LDCs to this market.

In order to obtain some idea of why developing countries tap the eurobond market when they already have considerable access to bank finance, one question to this effect was asked in section four of the questionnaire. It was felt that the simple question in section four was

sufficient because it was not intended to investigate why developing countries sought external finance but only why they seek bond finance when they already have bank finance.

Lastly, in section five, it was hoped that respondents to the questionnaire would provide a ranking to each answer they gave along the scale a - very important to c - not important.

8.5 The Results of the Questionnaire

The questionnaire was sent to the chief executive in charge of eurobond syndications at 53 institutions in London. The population of institutions consisted of members of the London section of the Association of International Bond Dealers, a number of merchant banks, most of which are affiliated with UK clearing banks, and the British Overseas Banks who have strong connections with developing countries.

All executives were contacted by telephone in advance to get their agreement to participate in the study, the number of agreements determining the number of questionnaires despatched. One month after the date of despatch of the questionnaire telephonic communication was made with all those executives who had not responded. Within two months of the original date of despatch, 28 responses were received, 53% of the population. This encouragingly high response is attributed to getting previous agreement to participation and the small size of the questionnaire.

The responses to the questionnaire are divided into two parts for purposes of analysis. The first part analyses the response to the questions which provided Yes/No answers, and the ranking of those answers. The second section analyses the comments, some of which were very detailed.

Analysis of Yes/No Answers in sections 1 to 3

The exact number of Yes/No answers to each question and the relative

importance of each question is given in appendix VIII with the questionnaire. The total of Yes and No answers to each question does not always equal 28 because not every respondent answered all questions. The same comment applies to the rankings because not all respondents ranked their answers.

Looking first at the response to section one, the majority response was that the nature of the market was most important. However, one fifth of the responses thought that it was a combination of the market and the instrument which was the cause.

Turning to section two, the majority of respondents did not think that the eurobond market was dominated by individuals. This runs counter to a popular theme in the literature (eg Ahmed, op cit; Scott Quin, op cit). Twenty three of the respondents considered that the market was not dominated by individuals but that the investors perceived the developing countries as being too great a risk. Fifty per cent of the respondents ranked the risk factor as being 'very important'.

The majority of respondents considered the secondary market to be disproportionately thin and an even larger proportion of respondents considered that this was a deterrent to potential investors. However, considering the importance of these two points, only about 25% of the respondents considered them to be very important and only one third considered them to be moderately important.

The question of credit ratings influencing the developing countries' access to the bond market was closely divided between limiting access and not limiting access but no respondents thought that this point was important.

It was noted by some respondents that there is no credit rating system solely related to the eurobond market and therefore ratings for the foreign bond and domestic bond markets would have to be used. The reluctance to obtain these ratings was considered to be due to the fact that governments do not generally apply for a rating unless they are

certain of getting the highest rating ie 'AAA'. However most developing countries would only be rated as 'highly speculative'.

Turning now to section three, only two respondents considered that the exchange risk deterred investors. Only one respondent considered that fixed interest rates deterred investors and only one respondent thought that borrowers were deterred by the long term and fixed interest rate nature of the eurobond instrument. However, note should be made of the comments on page 381 below.

Analysis of the responses to section four

Of the 28 responses, 24 respondents answered question 13 asking why countries which already have access to the syndicated loans market also tap the bond market. The answers had three common themes a) the need to tap every possible source of funds, b) to enjoy the certainty of fixed cost finance and c) prestige.

The comments regarding the need to tap every possible source of funds often noted the desperate plight of the developing countries in their search for funds. Other respondents saw the use of the bond market as a prudential diversification of geographical and sectoral sources of funds. Some respondents also noted the prudential diversification of maturities in that eurobonds are traditionally repaid only at maturity. This gives certainty regarding maturity of commitments which may be lacking with a roll-over credit.

An interesting comment which is an extension of the diversification of sources was that "the banks are over-extended to LDCs, therefore if the banks see an opportunity to share this burden with non bank investors, they will bring an issue to the market". This indicated that the banks themselves have an interest in diversifying the sources of funds to developing countries in order to relieve the pressure on their own exposure limits.

The many respondents who considered that the bond market was

accessed in order to achieve some fixed cost element in the total borrowing considered this to be advantageous even if rates were high at the time of issue. It is also interesting to note that if markets have expectations of rising interest rates borrowers are encouraged and investors discouraged from fixed rate issues. This view was confirmed in comments relating to questions 8 and 9 in section three. The 1970's has experienced a secular rise in interest rates. As the majority of LDC bond issues to date have been fixed rate issues (80%), this may add to the factors that deter investors.

One respondent noted that although the banks were the only investors capable of carrying out the necessary risk analysis, they cannot lend on fixed rate instruments because of the floating rate nature of their liabilities (deposits). In this respect it should be noted that, with the growing popularity of floating rate notes, the banks have been willing to invest more for their own account in the bond market.

The prestige of the borrower figured prominently as a reason for tapping the bond market. The achievement of a successful bond issue put the borrower in a select club of good names. There was also an element of an educating role in that if one bond issue is seen to be successful, and the borrower meets its commitments, not only will future bond issues be possible but the borrowers' credit rating in other markets will improve. The role of publicising the borrower's name via the bond market so that underwriters and investors alike become familiar with the name was also considered to be a beneficial reason for tapping the bond market.

Analysis of additional comments in responses to sections 1 to 3 and section 5

Turning now to the additional comments from the respondents, the overwhelming comments related to reasons why the eurobond market, and indeed bond markets generally, had been so little used by developing

countries. The main reason for this little use was considered to be the perception of the credit risk involved. It was considered that investors, whether institutional or individual, invest only in good quality names. Some respondents thought that investors in bonds did not have the ability to carry out sophisticated analysis of the credit and political risks involved. Furthermore, many investors see the anonymity provided by eurobonds as beneficial. However, the desire to maintain anonymity precludes the establishment of bondholder organisations that can seek to enforce bondholders' rights upon default. A considerable proportion of eurobonds are bought by discretionary funds which are precluded from buying into risk situations. Furthermore, although the market was generally thought to be dominated by institutional investors, at least in terms of volume of funds, the dominance can shift towards individuals. For example one respondent considered that in the latter half of 1981 75-80% of fixed rate bonds were bought by Swiss banks on behalf of their individual clients.

Implicit in the statements that all investors lack the sophistication to carry out the appropriate risk analysis is the suggestion that institutional investors also lack that capability. This seems a surprising conclusion and some doubt as to its validity may be gleaned from the comments of a few respondents who thought that institutional investors were less quality conscious than individual investors. Maybe the institutional investors can carry out the "appropriate" risk analysis. Again, a few respondents considered that one reason why banks found LDC risk acceptable is that they could fully diversify their risks because of the large size of their balance sheets. However, one would expect the same of many institutional investors but maybe not of individuals.

The off-shore nature of eurobond issues was considered by some respondents to make the job of risk analysis and monitoring the condition of the investment more difficult. This is particularly so when the most

difficult risk to analyse is political risk. Even countries with sound economies can be politically unstable as changes of government do occur very rapidly.

A further set of comments may shed more light upon the attitude of investors to the credit ratings. After all, even individual investors may feel safe lending money to the same governments as their bank has lent to. One may think that potential investors would use the credit rating implicit in the publicised terms of the banks' lending. That this does not seem to be so may be explained in the differing attitudes to the principal value of the loan. Several respondents considered that bonds were treated by both individual and institutional investors as safe havens for capital. Capital certainty rather than high income is the desire of the investor. This corroborates the theoretical point made on pages 8 and 9 above that investors who are not financial intermediaries are more concerned with capital certainty because the investment is made with their wealth (equity) and not intermediated funds.

The behaviour of a bank as an investor in syndicated loans is different in that they need income certainty so that they can cover the costs of funding their investments. The banks are therefore willing to roll-over loans, reschedule loans or repay existing loans with new loans providing income is certain. As banks have to maintain the attractiveness of deposits and because deposits often come from different sectors of the economy than those to which loans are made, banks are often under pressure to take upon themselves the high risks associated with financial intermediation in order to deploy deposit funds profitably.

Many respondents, considering that banks and not bond investors are equipped to carry out risk analysis of LDCs, cited the fixed interest nature of the majority of bonds issued as the reason why banks were not greater investors in LDC eurobonds. In this respect it is notable that with the growing use of floating rate note issues the banks are becoming more important investors and that many LDC FRN issues have been sold to

banks. However, it should be noted that one respondent considered that FRN issues were more expensive in terms of issue costs than a syndicated loan on similar terms. Moreover, FRN issues over $100 million were difficult to make. Thus an FRN issue was inappropriate to the needs of developing countries.

The thin secondary market, which was commented on by several respondents, will have a detrimental influence on the ability of investors to divest themselves of their bonds without suffering capital losses. The role of a deep secondary market in giving investors confidence in the liquidity of their bond investments was considered to be so important that one respondent considered the small secondary market in LDC eurobonds to be one of the most important factors limiting the access of LDCs to the eurobond market. Of course there is a 'chicken and egg' problem here because unless there are substantial issues of LDC bonds, and that each issue is large, not enough individual bonds will be traded to establish a secondary market. However, it must be noted that the ranking of the Yes/No answers implied that the size of the secondary market was less important than the comments suggest.

The depth of the secondary market is crucial for institutional investors because they frequently change their investment criteria with regard to currency and maturity risk. If the secondary market is thin, there may be considerable implicit transactions costs involved in these shifts and therefore a thin secondary market will make LDC eurobonds less than attractive to institutional investors. The dominance of institutional investors noted earlier will make this factor all the more important.

It was also suggested earlier that investors in eurobonds were more interested in low risk rather than high income. Nevertheless, some respondents did consider the question of the adequacy of compensation for the risk involved. Three respondents thought that considerably higher risk premiums than are currently available would be required to make LDC

bonds acceptable. It was also noted that at the appropriate price the LDCs would perceive the finance as too expensive and would seek alternative sources of finance. Furthermore, countries that are currently least attractive to the bond markets can borrow bond market funds at fine rates via the IBRD, IADB and similar institutions.

Considering the comments that the yield on bond issues which compensated for the risk involved would be perceived as too high, it must be remembered that the yield on a eurobond is only the coupon yield plus any change in the secondary market price. Thus, this yield is explicit to the borrower and investor. However, the yield on a bank loan has an explicit element - spread plus fees - but also an implicit element in terms of the other business income that can be generated from the borrower's wider banking connection. This may even amount to goodwill in allowing branches to operate in the borrower's country. Thus the explicit yield on syndicated loans can be lower than the explicit yield on eurobonds for the same risk. Furthermore, one respondent considered that the risk premium between LDC and, say, OECD borrowers is greater in the bond market than in the syndicated loans market. Therefore the LDCs may wish to avoid this premium.

In the responses comment was made not only of the small size of the secondary market, but the small size of the total eurobond market compared with that of syndicated loans. Two points were made about this relative size. One was that good quality issues crowded out poorer quality ones. Secondly, because there was an adequate supply of good quality paper investors do not have to lend to developing countries. The corollary of this is that investors do not learn about developing countries - these countries do not become 'household names'. Thus the credit reputation of all LDCs is tarred by the defaults of a few. While this crowding out persists the 'education' of investors will be a slow process and therefore the bond market will not be generally available to LDCs for a long time to come.

The slowness of the educating process in the bond market is contrary to that in the syndicated loans market where, because of a combination of opportunity and necessity, the banks learned very quickly to assess the risks of LDC lending.

It is clear that the greater proportion of comment was about the reluctance of investors to buy LDC eurobonds. However, there were a few comments about the bond market not being considered desirable by LDCs.

Firstly it was noted that the bond instrument was a very rigid instrument with many covenants which, when broken, constitute default. Thus if the developing country's circumstances change such that it cannot comply with the covenants, it has the choice of repaying the bond or of defaulting. A syndicated loan on the other hand is much more flexible. Re-negotiation of the terms of the loan is possible, first because banks are used to providing a flexible form of finance and, secondly because relatively few members of a syndicate are involved. This compares with the impossibility of negotiating with a large number of anonymous eurobond investors.

It was also suggested that developing countries prefer to borrow from the banks because they perceive that only the banks are equipped to carry out a fair and accurate risk assessment. Thus only from a bank will they get fair (favourable?) terms for the finance. This may reflect the fact that banks get a greater proportion of implicit yield on syndicated loans than bondholders do from their bonds. This comment may also reflect greater competition in syndicated lending following the necessity to deploy a growing volume of deposits during the 1970's.

Finally one respondent considered the interest cost of eurobonds to be unfavourably high for LDCs compared with syndicated loans.

8.6 Conclusion

This study does not give rise to a confident outlook regarding future increased access of the developing countries to the eurobond market. Particular features which will preclude access are the perception of credit risk by investors, legalistic limitations upon institutional investors and the crowding out of developing country paper because of the limited size of the eurobond market.

It seems essential to take steps to deepen the secondary market in these bonds in order to make them more attractive generally. However, it is realised that this may be difficult until the primary market for LDC paper is enlarged.

There does seem to be a need to pay substantially higher yields if the developing countries are to increase access. This in itself may be unattractive to the borrowers. One way may be to provide some fiscal benefit to those investors who pay taxes along the lines provided to banks who make tax-spare loans to developing countries. There may be a greater role to play by the supranational institutions such as the IBRD in that they may be able to increase their access to the bond markets and then engage in more programme finance of the developing countries.

There is clearly the need for an educative process aimed at changing the attitudes of investors to developing country risks. However, in this respect, recent publicity regarding the rescheduling of bank debt must detrimentally affect confidence.

Chapter 9

CONCLUSIONS AND RECOMMENDATIONS

9.1 Resume

In chapter one it was shown that growth aspirations, external shocks and the quantitative inadequacy of official external finance forced the LDCs to make use of private sources of external finance during the 1970's. However, this increased access to private finance was not available to all LDCs and indeed the poorest LDCs were net depositors with the international banks.

The relative profitability of loans to LDCs, the increased liquidity of the euromarkets after 1973 and - for the US banks at least - the relaxation of controls, encouraged the banks to make strategic changes in their loan portfolios and satisfy the increasing demand for loans by LDCs. Such was the satisfaction of this demand that banks became the major suppliers of such finance.

Chapter two showed that the syndicated roll-over loan was well suited to the supply of the individually large medium to long term credits required by the LDCs.

Chapter three showed that it is feasible for many of these loans to be provided at zero or at least very low marginal cost to the banks where the interest costs of funding the loan are passed directly to the borrower within the terms of the loan agreement. Because of the low level of marginal cost and very elastic demand curves for loans due to the degree of competition in the eurocurrency loan market, the banks were able to pursue the objective of asset growth without reaching the profit maximising size of portfolio. The constraints postulated were not the equality of marginal cost with marginal revenue but a minimum return on total assets or a maximum level of perceived risk. The existence of this latter constraint early in the 1980's was confirmed in a survey of bankers

reported more fully in chapter seven.

Chapter four investigated the cost of funds to LDC borrowers by way of syndicated loans and eurobonds. This chapter showed how interest rates on both were related to the domestic rates of the countries whose currency was being used. In particular the US domestic interest rates had a strong influence upon eurodollar rates and therefore upon the debt servicing costs of LDC borrowers. Moreover, it was shown that rising interest rates on floating rate debt that compensate for inflation reduce the real maturity of that debt such that it may be inappropriate for the development or adjustment process.

Chapter four showed the magnitude of the substantial risk premia paid by the relatively few LDCs that have gained access to the eurobond market. It was also shown that the spread on syndicated loans was a poor indicator of risk or yield. Firstly, this is because of inadequate information about fees and secondly, because during periods of high liquidity, spread differentials between borrowers have narrowed considerably.

The conclusion of chapter four is that the costs of external finance to LDCs are very strongly influenced by the monetary-fiscal policy stance of the OECD countries, particularly the USA. As is being experienced at the time of writing, the level of interest rates in some of these countries bears little relationship with the level of inflation that the LDCs experience in their export markets.

Chapter five showed that the growth of worldwide bank lending to LDCs had been more rapid than the growth of GNP or exports for LDCs collectively. However, this may be expected where much of the borrowing is to finance long term projects or macroeconomic adjustment.

It was also noted that loans to LDCs had grown faster than the UK banks' capital and this phenomenon was presumed to apply to all major banking centres. However, for the UK banks at least it was shown that despite this increase between 1978-82 such lending had not grown significantly as a proportion of total non resident advances and only

slightly in terms of total balance sheet size.

The degree of profitability on bank loans to LDCs was shown to be greater than on loans to OECD based borrowers. This was because of higher spreads and lower loan loss ratios than experienced with domestic banking - at least during the 1970's.

This chapter showed that the debt servicing costs had risen substantially during the 1970's, not just because of the increasing size of the debt but because of the movement towards private sources of finance. In particular the movement towards floating rate debt and the high nominal and real interest rates experienced towards the end of the decade considerably increased the ratios of interest payments to GNP and exports and the proportion of interest going to private financial markets.

Furthermore, this chapter illustrated the weaknesses of assessing debt service requirements with the currently inadequate data regarding debt with an original maturity of one year or less. It was shown on page 236 that assuming an average LIBOR for the year in question due on all bank debt and repayment of all debt due within one year, servicing commitments were nearly five times as great as that suggested by taking interest and amortisation due on medium and long term debt as reported by the IBRD.

Chapter five also indicated the benefits of diversification of loan portfolios. However it was shown that loans are subject to systematic risk due to rising interest rates and the attendant impact upon exchange rates.

Although diversification by country seemed to be adequate, when diversification was looked at from the point of the source of export revenue, a different picture emerges. LDCs as a group depend upon the export of primary products to earn foreign exchange. On average 62% of these exports go to only five markets and the US market accounted for 36%. Moreover, several countries had considerable degrees of concentration in one export commodity. It was therefore considered that the banks' portfolio of LDC loans was not adequately diversified in terms of source of debt servicing ability.

Chapter six investigated ways of reducing the risk associated with international bank lending. The suggestions formed two groups: those that reduced the risks of lending to LDCs specifically and those that reduced the risks of international financial intermediation generally. The acceptability to the bankers of the various suggestions was tested by a questionnaire survey of over 200 banks in London.

In the responses to this survey, reported in chapter seven, there was considerable support for restructuring the maturity profile of LDC debt, although the banks generally hoped that it would be voluntary from their point of view. Furthermore, it was considered that restructuring should be accompanied by adjustment policies. In this respect there was substantial support for the writer's suggestion that debt rescheduling should become a legitimate aspect of debt management policy.

There was also a view that the borrowers' debt management must be improved in order to avoid bunching of maturities and to make the maturity profile flexible within the light of the changing circumstances of the borrower.

Suggestions of direct subsidy of LDC interest payments by richer countries were not strongly supported. However, there was support for the writer's suggestion that an IMF facility be established that will allow countries to finance short term increases in debt servicing costs caused by upward fluctuations in interest rates provided that these cause balance of payments difficulties. It was thought that there may be some definitional problems particularly about interest rate trends and administrative problems regarding repayment but these are not considered insurmountable.

It was thought that guarantees would increase the flow of finance to LDCs provided that the guarantors were the richer industrial countries acting in concert. It was considered that the guarantees would have to be available to all LDCs otherwise those that are unguaranteed would be crowded out of the market.

If a system of guarantees were applied to the later years of a restructured debt this may encourage a general restructuring to longer maturities more appropriate to economic development. One problem is that if the giving of guarantees is perceived as akin to aid, the richer LDCs - who have borrowed most - will be seen to be receiving the most aid.

Chapter eight investigated, with the aid of a second questionnaire survey, the reasons for the limited access to the eurobond market for LDCs. The indicated reasons were that bond investors were more risk averse than banks and that LDC bonds were perceived to exhibit too great a risk.

9.2 Conclusions and Recommendations

Given the level of the LDCs' external debt and the reasons for the accumulation of such debt, it is unrealistic to expect any significant reduction in the level of that debt. Indeed as growth and gradual economic adjustment are objectives to be achieved within an inflationary environment, an increase in that debt will be required.

If this increase in debt is to be achieved without jeopardising the stability of the international financial system, the bankers' perception of the risk of default on debt servicing must be reduced. If this reduction in perceived risk can be achieved, the writer is confident that, given the desire of the banks for asset growth, additional bank finance will be available to LDCs.

Abstracting from suggestions related to world economic growth and growth of trade, such as less protection in LDC export markets or additional growth in OECD economies, it is possible to suggest changes to the current financial order which will make debt service more certain.

Firstly, a way must be found to remove the interest servicing burden resulting from upward movement in interest rates, particularly where these are unrelated to the inflation rates in the LDCs' export markets. Aid payments would be politically difficult and, moreover, unless such payments come from additional aid nothing would be gained.

The suggestion that an IMF facility analogous to the Compensatory Financing Facility but related to higher interest costs of debt is considered to be in urgent need of investigation and is recommended here

as a subject for further research.

It is also felt that there is a need for a radical review of the role of official bilateral credits in development finance. In particular, as it is not the primary function of governments to act as commercial money lenders and given that such loans are often made for altruistic, political or export promotion reasons, one must consider the impact of converting all such debt into grants. In this respect it is recommended that further research is required into the impact of such a conversion upon the debt servicing commitments of the borrowers and the public finance of the lenders.

There is an urgent need for the maturity structure of all debt to be reviewed. In particular the maturity of loans must be extended, where appropriate, to match the gestation period of the project financed. The term project includes macroeconomic adjustment. Moreover, the banks must be more flexible in their attitude to changing the maturity structure as borrowers' circumstances change. However, it must be doubted whether it will be possible to incorporate supplier credits into such a scheme.

When undertaking the review of the maturity profile of the debt, the reviewers should be mindful of the fact that the risk of default is reduced if timing of the cash flow of the project financed matches the amortisation schedule of the loan.

Furthermore, given that bankers do not rely upon the repayment of loans to meet depositors' claims and that it is natural for financial intermediaries to engage in risk and maturity transformation, banks are capable of converting existing debt onto a much longer average maturity than presently applies. The point for the bankers to note is not whether the debt will ever be repaid but whether interest payments will remain current.

Hand in hand with the restructuring of the debt, there must be improved debt management by the borrowers. This will ensure timely payment of amortisation and interest payments which themselves will create a

better climate for refinancing and may even reduce the rate of interest required by the banks. Moreover, better debt management should enable the borrowers to anticipate their refinancing requirements with sufficient lead time so as to avoid lack of market confidence and the need to reschedule in crisis conditions.

There may be a role to play in providing guarantees over the later years to maturity for the poorer countries. However, the decision to implement such a suggestion should await the findings of the investigation into the role of official bilateral finance, the reason being that the poorer LDCs get a greater proportion of their external finance from official sources. Converting any such loans into grants may obviate the need for guarantees.

Although the above recommendations relate to debt ie bank assets, any instability in the financial system will probably manifest itself as a run on deposits of a particular bank or group of banks. It is therefore essential that a uniform and adequate system of prudential regulation is developed, together with a uniform lender of last resort facility that ensures that banks will not fail just for lack of liquidity. This suggestion does not include supporting insolvent banks. Nevertheless, the regulatory authorities and the accounting profession must consider fully their approach to the treatment of rescheduled debts in bank balance sheets.

With respect to the eurobond market, the writer considers that little can be done in the present financial climate to encourage a substantially larger proportion of development finance directly from investors. However, the official multilateral institutions must be ever vigilant to tap the bond markets where the segmentation of the euromarkets makes this possible without artificially raising interest rates.

In addition to these recommendations several areas of study are worthy of further research before conclusions can be made about their benefits to the international financial system. These are:-

- research into an appropriate code of conduct for rescheduling;
- research into the most appropriate form of loan documentation and risk sharing agreement for co-financing with multilateral agencies;
- research into the economic, legal and administrative implications of expanding the secondary market in eurocurrency loans.

The recommendations made in this chapter will not transform the international debt problem overnight. They will take time to work, not least because the attitudes of the bankers, the borrowers and the authorities need time to change. Nevertheless, the phenomenon of LDCs as major users of international financial markets is likely to be permanent and therefore it is essential that it does not have a destabilising influence on the international monetary system.

APPENDIX I : COUNTRY GROUPINGS

LIST OF COUNTRIES BY INCOME GROUPS

1980 World Bank Atlas Definitions

(Based on 1978 GNP per capita in 1978 US dollars)

Upper Middle Income ($3,000-$6,999)

Bahrain
Gabon
Greece
Hong Kong
Israel
Singapore
Spain
Trinidad & Tobago

Intermediate Middle Income ($700-$2,999)

Algeria
Argentina
Barbados
Brazil
Chile
Colombia
Costa Rica
Cyprus
Dominican Republic
Ecuador
Fiji
Guatemala
Iran
Iraq
Ivory Coast
Jamaica
Jordan
Korea, Republic of
Lebanon
Malaysia
Malta
Mauritius
Mexico
Nicaragua
Oman
Panama
Paraguay
Portugal
Syrian Arab Republic
Taiwan
Tunisia
Turkey
Uruguay
Venezuela
Yugoslavia

Lower Middle Income ($300-$699)

Bolivia
Botswana
Cameroon
Congo, People's Republic of
Egypt, Arab Republic of
El Salvador
Ghana
Guyana
Honduras
Indonesia
Kenya
Lesotho
Liberia
Morocco
Nigeria
Papua New Guinea
Peru
Philippines
Senegal
Sudan
Swaziland
Thailand
Togo
Yemen, Arab Republic of
Yemen, People's Dem Republic of
Zambia

Low Income (less than $300)

Afghanistan
Bangladesh
Benin, People's Republic of
Burma
Burundi
Central African Republic
Chad
Comoros
Ethiopia
Gambia
Guinea
Haiti
India
Madagascar
Malawi
Maldives
Mali
Mauritania
Nepal
Niger
Pakistan
Rwanda
Sierra Leone
Somalia
Sri Lanka
Tanzania
Uganda
Upper Volta
Zaire

Appendix I continued

OECD DEFINITIONS OF LDC GROUPS

The DAC list of developing countries includes all countries and territories: in Africa, except South Africa; in America, except the USA and Canada; in Asia, except Japan; in Oceania, except Australia and New Zealand. In Europe, it comprises Cyprus, Gibraltar, Greece, Malta, Portugal, Spain, Turkey and Yugoslavia. Other organisations' lists differ from the DAC's mainly by excluding some or all of the above European countries. China was added to the DAC list in 1980. This has no effect on the figures for resource flows up to 1979 and China has not been included in the economic analysis of developing countries' trends and problems.

Unless otherwise specified *OPEC donors* refers to the members of that organisation other than Indonesia and Nigeria. *Net-oil-exporters* are all 13 OPEC members and Angola, Bahrein, Bolivia, Brunei, Burma, Congo (PR), Egypt, Malaysia, Mexico, Oman, Peru, Syria, Trinidad and Tobago, Tunisia and Zaire.

Low-income countries (LICs) are defined in this report as those whose per capita income in 1978 was below $450, computed on the basis used in the IBRD "World Bank Atlas", with the *least-developed countries* (LLDCs) treated as a sub-group. The other developing countries are referred to collectively as *middle-income countries* (MICs). They are divided into *newly-industrialising countries* (NICs): Argentina, Brazil, Greece, Hong-Kong, Republic of Korea, Mexico, Portugal, Singapore, Spain, Taiwan and Yugoslavia, and the *other MICs* (usually taken as "non-oil MICs" by excluding OPEC donors).

Countries	Countries	Countries
Low income countries	Bahamas	St. Lucia
* Afghanistan	Bahrain	St. Pierre & Miquelon
Angola	Barbados	San Tome & Principe
* Bangladesh	Belize	Seychelles
* Benin	Bermuda	Surinam
* Bhutan	Bolivia	Swaziland
Burma	Botswana	Syria
* Burundi	Brunei	Thailand
* Cape Verde	Cameroon	Tokelau Islands
* Central African Rep.	Cayman Islands	Trinidad & Tobago
* Chad	Chile	Tunisia
* Comores	Colombia	Turkey
Dominica	Congo	Turks & Caicos Islands
Egypt	Cook Islands	Tuvalu
Equatorial Guinea	Costa Rica	Uruguay
* Ethiopia	Cuba	Virgin Islands (Br.)
* Gambia	Cyprus	Wallis & Futuna
Ghana	Djibouti	* Western Samoa
* Guinea	Dominican Republic	* Yemen
Guinea-Bissau	El Salvador	Zambia
* Haiti	Falkland Islands	Zimbabwe (Rhodesia)
India	Fiji	
Indonesia	Gibraltar	*OPEC*
Kampuchea	Grenada	Algeria
Kenya	Guadeloupe	Ecuador
* Laos	Guatemala	Gabon
* Lesotho	Guiana, French	Iran
Madagascar	Guyana	Iraq
* Malawi	Honduras	Kuwait
* Maldives	Israel	Libya
* Mali	Ivory Coast	Qatar
Mauritania	Jamaica	Saudi Arabia
Mozambique	Jordan	United Arab Emirates
* Nepal	Kiribati (Gilbert Isl.)	Venezuela
* Niger	Lebanon	Total
Niue Island	Liberia	
Pakistan	Macao	*Newly Industrializing Countries (NIC's)*
* Rwanda	Malaysia	Argentina
St. Vincent	Malta	Brazil
Senegal	Martinique	Greece
Sierra Leone	Mauritius	Hong Kong
Solomon Islands (Br.)	Montserrat	Korea, Rep.
* Somalia	Morocco	Mexico
Sri Lanka	Nauru	Portugal
* Sudan	Netherlands Antilles	Singapore
* Tanzania	New Caledonia	Spain
Timor	New Hebrides	Taiwan
Togo	Nicaragua	Yugoslavia
Tonga	Nigeria	
* Uganda	Oman	
* Upper Volta	Pacific Islands (U.S.)	
Viet Nam Soc. Rep.	Panama	
* Yemen, Dem.	Papua New Guinea	
Zaire	Paraguay	
	Peru	
Middle income countries (excl. OPEC and NIC's)	Philippines	
Anguilla	Polynesia, French	
Antigua	Reunion	
	St. Helena	
	St. Kitts Nevis	

*LLDCs

Source: Review Development Corporation 1980 Table H2

Appendix II*

UPPER MIDDLE INCOME

Government

	Disbursed debt outstanding	Disbursements	Amortise	Net flow	Interest	Net Transfer
1973	3359.3	667.3	240.0	427.3	142.0	285.3
1974	3906.8	737.9	316.1	421.8	160.3	261.5
1975	4482.2	1016.1	317.7	698.4	190.3	508.1
1976	5591.8	1377.1	363.0	1014.1	207.1	807.0
1977	6580.1	1190.0	280.8	909.2	234.1	675.1
1978	7868.3	1521.2	353.8	1167.4	265.5	901.9
1979	9220.4	1841.3	541.6	1299.7	391.4	908.3

International Organisations

	Disbursed debt outstanding	Disbursements	Amortise	Net flow	Interest	Net transfer
1973	664.5	142.7	42.3	100.4	44.0	56.4
1974	785.7	154.2	47.6	106.6	51.0	55.6
1975	875.1	152.9	53.5	99.3	60.6	38.7
1976	983.7	169.2	72.8	96.4	69.2	27.2
1977	1104.0	158.7	75.0	83.8	76.6	7.2
1978	1197.8	122.5	83.8	38.6	93.7	-55.1
1979	1229.7	124.8	108.2	16.6	106.1	-89.5

* Amounts in this table are in US $ millions.
Source: IBRD World Debt Tables various issues.

UPPER MIDDLE INCOME

Financial Institutions

	Disbursed debt outstanding	Disbursements	Amortise	Net flow	Interest	Net Transfer
1973	1715.3	646.1	318.2	327.8	120.0	207.8
1974	3079.6	1552.3	234.3	1318.0	198.2	1120.8
1975	4556.5	1882.7	348.5	1534.2	295.3	1239.9
1976	6046.1	2058.3	467.4	1590.8	357.1	1233.7
1977	8178.4	2658.3	716.3	1942.0	434.7	1507.3
1978	9030.6	2545.5	2009.0	536.5	684.8	48.3
1979	10025.6	1950.6	1064.0	886.5	1013.9	127.4

Bonds

	Disbursed debt outstanding	Disbursements	Amortise	Net flow	Interest	Net transfer
1973	2318.2	508.0	101.1	406.9	58.5	348.4
1974	2502.0	283.6	165.6	118.0	62.6	55.4
1975	2729.9	431.2	193.1	238.2	74.8	163.4
1976	2981.8	244.5	21.6	222.9	41.1	181.8
1977	3714.9	729.2	151.2	578.0	92.3	486.7
1978	4183.5	384.0	135.9	248.0	161.0	87.0
1979	4381.3	424.9	239.2	185.7	208.7	23.0

UPPER MIDDLE INCOME

Suppliers

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net Transfer
1973	661.3	260.4	121.7	138.7	36.8	101.9
1974	717.6	144.8	115.7	29.1	41.2	-12.1
1975	742.0	186.6	129.6	57.0	37.3	19.7
1976	734.1	141.7	139.3	2.5	39.4	-36.9
1977	821.1	183.3	151.7	31.6	35.9	4.3
1978	762.5	283.3	425.0	-141.6	63.4	-205.0
1979	735.5	181.4	213.8	-32.4	55.6	-88.0

Appendix II continued

INTERMEDIATE MIDDLE INCOME

Government

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net Transfer
1973	13522.8	2500.9	764.1	1736.8	350.3	1386.5
1974	15997.6	2762.8	853.7	1909.0	397.8	1511.2
1975	17702.2	2877.4	987.9	1889.5	592.3	1297.2
1976	19970.1	3256.8	1163.7	2093.1	726.5	1366.6
1977	22723.4	3384.2	1393.7	1990.6	814.4	1176.2
1978	27752.6	4396.6	1721.6	2675.0	979.2	1695.8
1979	30805.7	4792.2	2514.6	2277.6	1154.9	1112.7

International Organisations

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net transfer
1973	6218.5	1234.5	287.4	947.1	384.0	563.1
1974	7588.3	1678.9	325.1	1353.7	479.2	874.5
1975	9192.2	2026.5	372.1	1654.4	573.3	1081.1
1976	10944.8	2185.5	451.2	1734.3	701.3	1033.0
1977	12946.4	2408.2	601.1	1807.1	885.6	911.5
1978	15526.1	2933.7	673.1	2260.6	1175.0	1085.6
1979	18493.2	3725.4	802.1	2923.3	1365.1	1558.2

INTERMEDIATE MIDDLE INCOME

Financial Institutions

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net Transfer
1973	12162.6	5679.3	1413.5	4265.8	653.5	3612.3
1974	17694.3	7185.5	1960.8	5224.8	1310.2	3914.6
1975	25242.1	9641.2	1907.9	7733.4	1808.0	5825.4
1976	36388.1	14005.2	2618.8	11386.4	2262.6	9123.8
1977	49195.1	17081.7	4786.2	12295.5	2898.8	9397.7
1978	70353.1	29858.0	10168.6	19689.4	4506.4	15183.0
1979	93419.9	36778.2	14306.1	22472.2	8081.7	14390.5

Bonds

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net transfer
1973	1945.8	451.3	300.1	151.1	139.5	11.6
1974	2145.7	482.9	322.4	160.5	155.1	5.4
1975	2285.6	410.5	205.4	205.1	187.8	17.3
1976	3074.5	1016.7	265.3	751.3	201.0	550.3
1977	5860.3	2757.5	289.5	2468.0	255.2	2212.8
1978	8885.3	2868.8	527.7	2341.1	510.5	1830.6
1979	9501.2	1478.6	694.9	783.7	722.6	61.1

INTERMEDIATE MIDDLE INCOME

Suppliers

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net Transfer
1973	6394.9	1884.4	1088.7	795.7	403.2	392.5
1974	7140.8	1739.8	1273.4	466.4	383.1	83.3
1975	7597.9	2281.2	1528.1	753.1	414.5	338.6
1976	8533.6	2748.5	1715.5	1033.0	537.5	495.5
1977	10359.5	3268.3	2033.5	1234.8	586.7	648.1
1978	14159.6	5144.2	2370.9	2773.3	793.1	1980.2
1979	13774.3	2967.0	2998.1	-31.1	953.8	984.9

LOWER MIDDLE INCOME

Government

	Disbursed debt outstanding	Disbursements	Amortise	Net flow	Interest	Net Transfer
1973	9884.8	1753.7	574.5	1179.2	214.4	964.8
1974	11728.0	2026.7	554.4	1472.3	220.8	1251.5
1975	14555.7	3849.8	572.8	3277.0	305.8	2972.2
1976	17033.0	2985.3	527.0	2458.3	331.3	2127.0
1977	21036.9	3781.8	695.1	3086.7	607.4	2479.3
1978	24948.2	3691.1	842.3	2848.8	670.4	2178.4
1979	27218.7	4083.5	1088.0	2995.5	789.0	2206.5

International Organisations

	Disbursed debt outstanding	Disbursements	Amortise	Net flow	Interest	Net transfer
1973	2042.9	398.4	85.7	312.6	103.4	209.2
1974	2535.8	591.7	101.5	490.2	124.4	365.8
1975	3467.1	1038.7	102.5	936.2	155.3	780.9
1976	4603.5	1259.2	123.2	1136.0	204.0	932.0
1977	7212.0	2734.7	145.5	2588.7	306.8	2281.9
1978	9713.0	2646.2	190.9	2455.3	503.1	1952.2
1979	11792.2	2347.1	280.8	2066.4	559.4	1507.0

LOWER MIDDLE INCOME

Financial Institutions

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net Transfer
1973	1863.6	1027.7	399.5	628.2	82.7	545.5
1974	3137.8	1649.9	391.0	1258.9	163.8	1095.1
1975	5407.4	2746.6	377.3	2369.4	319.9	2049.5
1976	7813.7	2883.4	417.4	2466.0	466.2	2000.8
1977	10312.1	3336.0	1045.1	2290.9	672.4	1628.5
1978	13603.9	4515.2	1818.8	2696.4	825.4	1871.0
1979	17828.9	6863.4	2640.3	4223.1	1455.8	2867.3

Bonds

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net transfer
1973	329.1	36.5	8.8	27.7	14.9	12.8
1974	352.9	32.7	16.2	16.5	18.4	-1.9
1975	364.1	52.5	18.9	33.7	17.1	16.6
1976	709.5	397.6	20.5	359.1	29.8	329.3
1977	951.5	234.1	20.3	213.8	55.3	158.5
1978	1418.3	451.3	55.3	396.0	64.1	331.9
1979	1545.2	204.1	37.2	166.9	80.3	86.6

LOWER MIDDLE INCOME

Suppliers

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net Transfer
1973	2221.9	560.8	466.4	94.4	51.3	43.1
1974	2825.6	1008.3	503.6	504.7	69.3	435.4
1975	3474.6	1399.4	714.7	684.7	104.1	580.6
1976	3919.9	1390.9	867.9	522.9	125.2	397.7
1977	4500.0	1391.5	994.6	396.9	109.9	287.0
1978	4921.0	1231.4	1041.0	190.3	158.0	32.3
1979	5196.5	1578.7	1169.5	409.2	307.1	102.1

LOW INCOME

Governments

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net Transfer
1973	14721.8	1463.6	419.3	1044.4	275.3	769.1
1974	16467.4	2472.7	525.2	1947.5	288.2	1659.3
1975	18174.8	3242.0	640.9	2601.0	320.9	2380.1
1976	20557.4	2599.9	594.0	2005.9	347.0	1658.9
1977	22993.4	2150.4	722.1	1428.3	404.4	1023.9
1978	25201.8	2305.7	790.4	1515.4	474.9	1040.5
1979	25318.0	2335.8	825.4	1510.4	530.1	980.3

International Organisations

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net transfer
1973	4009.3	666.2	105.2	560.6	103.7	456.9
1974	4814.3	812.3	111.5	700.8	107.9	592.9
1975	5775.6	1167.9	120.4	1047.5	114.6	932.9
1976	6924.6	1275.7	123.1	1152.6	155.2	997.4
1977	8259.7	1462.0	139.6	1322.4	162.7	1159.7
1978	10018.2	1869.6	151.0	1718.5	210.0	1508.5
1979	11725.2	1984.8	183.0	1801.9	254.2	1547.7

LOW INCOME

Financial Institutions

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net Transfer
1973	627.8	305.7	68.2	237.4	33.8	203.6
1974	916.7	371.6	82.9	288.7	51.3	237.4
1975	1108.4	304.0	86.0	218.1	55.0	163.1
1976	1314.4	331.8	67.4	264.4	42.8	221.6
1977	1671.7	399.5	71.9	327.6	56.7	270.9
1978	2052.4	410.4	89.0	321.4	94.0	227.4
1979	2342.9	394.2	132.7	261.5	103.4	158.1

Bonds

	Disbursed debt out-standing	Disburse-ments	Amortise	Net flow	Interest	Net transfer
1973	117.3	-	20.5	-20.5	7.2	-27.7
1974	112.0	-	7.2	-7.2	5.9	-13.1
1975	86.2	-	12.9	-12.9	5.1	-18.0
1976	61.4	-	10.0	-10.0	4.6	-14.6
1977	54.1	-	13.0	-13.0	3.2	-16.2
1978	53.7	-	3.2	-3.2	3.0	-6.2
1979	56.1	-	1.2	-1.2	3.0	-4.2

LOW INCOME

Suppliers

	Disbursed debt outstanding	Disbursements	Amortise	Net flow	Interest	Net Transfer
1973	1178.0	294.9	187.0	107.9	48.3	59.6
1974	1369.0	429.1	228.3	200.8	54.8	146.0
1975	1365.1	349.6	254.8	94.8	55.5	39.3
1976	1417.5	385.7	231.2	154.5	48.4	106.1
1977	1592.8	323.0	209.9	113.1	44.8	68.3
1978	1799.2	345.0	212.4	132.6	56.4	76.2
1979	1975.6	229.6	214.7	15	62.4	-47.4

Appendix III

Comparison of Yields on Eurobonds for IBRD and Selected Private UK Issues

	Date of issue	Amount of original issue	Yield to maturity	Life
IBRD	7/77	250	16.09	0.43
	6/76	250	15.50	4.34
	7/75	200	15.37	3.38
	12/75	250	15.50	3.8
	6/80	200	15.41	3.3
	6/81	500	15.42	4.34
	8/81	210	15.40	4.09
	10/81	300	15.94	4.68
	9/81	130	15.29	4.59
	9/81	100	15.57	6.59
	10/81	200	16.36	9.68
Barclays Bank International	6/75	50	14.72	0.34[1]
Barclays Bank O/S Inv	9/77	100	14.26	10.55
National Westminster Bank	6/78	75	14.68	4.3[2]
National Westminster Bank Finance	12/81	100	15.25	9.8[3]

[1] 3 other issues

[2] 1 other issue

[3] no other issues

Source: Association of International Bond Dealers
Quotations and Yields March 1982
published by Datastream PLC

NB The comparison has been limited to bonds where the yield to average life does not apply and where the residual maturity is similar

APPENDIX IV

Primary and Secondary Commodity Trade as % of Total Trade in 1978* or 1979

	Share of primary commodities in total exports	Share of manufactures in total exports	Share of fuel in total exports
Argentina*	73.6	26.4	12.4
Brazil	60.9	38.2	37.1
Chile*	44.4	55.6	
Colombia*	80.5	19.2	
Mexico (1974)	51.5	48.2	
Venezuela	97.9	21.1	0.6
Ecuador			
Algeria*	99.2	0.8	1.5
Nigeria	98.2	0.5	1.9
Indonesia	94.4	5.3	11.1
Korea S	10.7	89.2	18.6
Philippines (1974)	85.1	11.0	20.1
Thailand	67.0	30.6	21.3
Malaysia	60.7	38.5	12.0

*Countries marked thus give 1978 figures as most recent

Mexico and Philippines give 1974 figures as most recent

Source UN Yearbook 1979/80

APPENDIX V

Major Export Partners 1978

Country	Export mkt		% of exports going to individual markets as % of total exports USA	Germany	Netherlands	Japan
Argentina	Netherlands	10.28				
	Brazil	9.02				
	USA	8.56	8.56			
	Italy	7.94				
	West Germany	6.42		6.42		
	Other	57.78				
Brazil	USA	22.67	22.67			
	Germany	8.39		8.39		
	Netherlands	6.18			6.18	
	Japan	5.14				5.14
	France	4.18				
	Other	53.44				
Chile	Germany W	14.9		14.9		
	USA	13.58	13.58			
	Japan	11.97				11.97
	Brazil	10.17				
	Argentina	6.63				
	Other	43.46				
Colombia	USA	28.62	28.62			
	Germany	20.08		20.08		
	Venezuela	8.97				
	Netherlands	4.78			4.78	
	Sweden	3.61				
	Other	33.94				
Mexico	USA	65.6	65.6			
	Germany W	2.98		2.98		
	Brazil	2.93				
	Spain	2.10				
	Japan	1.77				1.77
	Other	24.62				

Appendix V continued

			USA	Germany	Netherlands	Japan
Venezuela	USA	36.49	36.49			
	Belgium	15.78				
	Netherlands	7.28			7.28	
	Colombia	5.92				
	Honduras	3.06				
	Other	31.47				
Ecuador	USA	43.6	43.6			
	Panama	9.57				
	Peru	8.50				
	Chile	6.41				
	Germany W	3.92		3.92		
	Other	27.99				
Algeria	USA	50.7	50.7			
	Germany W	13.75		13.75		
	France	11.35				
	Italy	7.45				
	Spain	2.61				
	Other	14.13				
Nigeria	USA	42.28	42.28			
	Netherlands	14.23			14.23	
	France	9.66				
	Germany W	9.43		9.43		
	UK	6.42				
	Other	17.98				
Indonesia	Japan	39.21				39.21
	USA	25.44	25.44			
	Singapore	10.66				
	Trinidad & Tobago	5.07				
	Netherlands	3.04			3.04	
	Other	16.57				
Korea S	USA	32.09	32.09			
	Japan	20.58				20.58
	Saudi Arabia	5.65				
	Germany W	5.22		5.22		
	UK	3.10				
	Other	33.36				

Appendix V continued

			USA	Germany	Netherlands	Japan
Philippines	USA	34.25	34.25			
	Japan	22.93				22.93
	Netherlands	8.56			8.56	
	Germany W	4.29		4.29		
	Indonesia	2.70				
	Other	27.47				
Thailand	Japan	20.3				20.3
	Netherlands	14.67			14.67	
	USA	11.02	11.02			
	Singapore	8.09				
	Hong Kong	5.34				
	Other	40.57				
Malaysia	Japan	21.66				21.66
	USA	18.62	18.62			
	Singapore	16.16				
	Netherlands	5.63			5.63	
	UK	4.81				
	Other	33.21				

Source: UN Yearbook 1979/80

APPENDIX VI

Exports by SITC Code - % of Country Total or World Total 1978

	SITC	% of country total	% of world total	
Argentina	044	9.2	7.6	
	045	6.6	31.0	
	013	4.1	14.3	
		19.9	52.9	18 commodities exported
Brazil	071	15.3	0	
	281	8.4	19.4	
	061	8.4	14.2	
	072	6.2	18.9	
	421	2.8	10.1	
		41.1	62.6	20 commodities exported
Chile	682	53.4	16.0	5 commodities exported
Colombia	071	65.5	16.5	8 commodities exported
Mexico	331	44.3		
	274	0.9	13.7	
		45.2	13.7	14 commodities exported
Venezuela 1975	331	65.5	5.2	
	332	27.0	7.8	
		92.5	13.0	2 commodities exported
Ecuador	331	40	0.4	
	071	17.4	2.2	
		57.4	2.6	4 commodities exported
Algeria	331	85.9	?	4 commodities exported

Appendix VI continued

	SITC	% of country total	% of world total	
Nigeria		-	-	Figures not available
Indonesia	331	52.1	?	
	242	10.0	22.9	
	231	6.0	12.3	
		68.1	35.2	4 commodities exported
Korea S	841	18.6	10.1	
Philippines	422	16.2	23.9	
	283	11.0	5.4	
		27.2	39.4	11 commodities exported
Thailand	042	14.7	25.1	
	231	11.6	7.9	
	054	10.4	9.1	
		36.7	42.1	9 commodities exported
Malaysia	331	17.4		
	231	15.1	21.9	
	242	9.7	15.9	
		42.2	37.8	6 commodities exported

Appendix VII All banks that responded

QUESTIONNAIRE

REDUCING THE RISKS ASSOCIATED WITH INTERNATIONAL BANK LENDING TO THE DEVELOPING COUNTRIES

SECTION I : INTRODUCTION

Constraints to increasing bank lending

1i Please indicate the importance of the following constraints to increasing bank lending to developing countries:

Constraint	Very important	Important	Not important
a)Current exposure limits are fully utilised	30	25	6
b)Bank capital adequacy	25	29	8
c)Doubt about future debt servicing ability	54	7	....
d)Profitability of LDC loans	13	32	14
e)Others, please specify:	....	....	....

1ii Which of these constraints do you think is the most important?

a 5. b 7 c 44 d ... e 3.

1iii Has the relative importance of these constraints changed in the last five years? If so, please specify:

This space may be used to expand any of the above answers:

2i What do you think are the major corporate objectives of the banking industry in relation to lending to developing countries?

2ii Which of these objectives is the most important?

2iii Has the relative importance of any of these objectives changed in the last five years? If so, please specify:

2iv Do banking firms change their corporate objectives as their experience in the euromarkets increases? If so, please specify:

This space may be used to expand any of the above answers:

Risks in international lending

3i Please indicate the relative importance of the following risks associated with international banking:

	Very important	Important	Not important
a)Risk of repudiation	.20.	.28.	.12.
b)Inability to service debt	.60.	..2.	....
c)Corporate credit risk	.35.	.26.	..1.
d)Interbank credit risk	.22.	.37.	..3.
e)Project risk	.21.	.37.	..2.
f)Portfolio risks:			
i Concentration of borrowers	.31.	.28.	..1.
ii Concentration of depositors	.17.	.38.	..5.
iii Liquidity risk of banks	.25.	.33.	..2.
iv Currency risk	.12.	.33.	.14.
v Interest rate risk	.14.	.29.	.16.
g)Others, please specify:	....	....	....

3ii Which of these risks do you consider to be the most important?

a .8. b .38 c ... d .1. e ... fi ... fii ... fiii ... fiv ... fv ... g ...

3iii Has the relative importance of these risks changed over the last five years? If so, please specify:

This space may be used to expand any of the above answers:

4. Does your bank have a formal management information system which allows you to determine the degree of diversification of your loan portfolio as follows:

	For individual branches only	On a group consolidated basis	
a) Diversification by country	....	.57.	5 did not respond
b) Diversification by industrial classification of borrower	...7.	.44.	11 did not respond
c) Diversification by major sources of borrowers' income eg major sources of export income in the case of sovereign borrowers	..6.	.26.	30 did not respond
d) By parent organisation in the case of corporate borrowers	....	.47.	15 did not respond
e) Other degrees of diversification, please specify:	..6.	..6.	

This space may be used to expand any of the above answers:

5i The economic literature regarding the aims of firms generally suggest the following:

Aims	Very Important	Important	Not Important
a)Maximisation of profits	.37.	.22.	..1.
b)Asset growth	..3.	.35.	.23.
c)Asset growth subject to a minimum level of profit	.21.	.30.	.10.
d)Minimisation of risk	.39.	.20.	....

Please tick according to the importance that your bank places on each of these aims.

5ii Which of these objectives is the most important?

a .20. b ..1. c ..9. d .28.

5iii Has the relative importance of any of these objectives changed in the last five years? If so, please specify:

5iv Does your bank have any aims in relation to lending to developing countries which are not listed above? If so, please specify:

This space may be used to expand any of the above answers:

SECTION II : METHOD OF REDUCING THE RISKS OF INTERNATIONAL BANK LENDING TO DEVELOPING COUNTRIES

REDUCING THE DEBT SERVICE BURDEN OF INTEREST PAYMENTS

This section assumes that, all other things equal, if the interest element of debt service costs is reduced the risk of default is also reduced.

6. Would you be in favour of a system of official aid payments being used to subsidise the interest costs of bank loans to the developing countries? Yes .34 No .22

Comments:

7i If such subsidies were granted in respect of the LIBOR, or similar, element of loan costs would it result in:

a) Current developing country borrowers being able to borrow more? Yes .22 No .30

b) The poorer developing countries, that have not yet gained access to external bank credit, gaining access to that credit? Yes .23 No .28

7ii Would your answers to question 7i be different if the subsidy allowed borrowers to pay higher spreads on loans? If so, please specify: Yes .10 No .37

This space may be used to expand any of the above answers:

8. Given the volatility of interest rates in recent years, would you favour the establishment of an IMF facility that allowed developing countries to accommodate increased interest costs due to rising interest rates? For example if they could borrow from the IMF to finance increased interest costs when interest rates are rising on condition that interest savings when rates fall are used to repay the IMF: Yes 32. No 23.

Comments:

9. Do you consider the establishment of index linked bank loans to be viable in the near future? Yes 8. No 46.

Comments:

DEBT RESTRUCTURING

10. Given that financial and economic circumstances change during the life of a loan, do you think that restructuring of the maturity structure of debt is a legitimate aspect of debt management policy? Yes 39. No 15.

Comments:

11. The rescheduling of external debt seems to take place in an air of crisis whereas refinancing seems to attract little comment. Therefore do you think banks and borrowers should cooperate in order to renegotiate the maturity structure of the borrower's debt well before a crisis looms? Yes 46. No 8.

Comments:

12. What do you consider to be the major costs to a bank of rescheduling developing country debt?

13. A feature of each recent publicised debt rescheduling has been the protracted period of negotiation and its attendant resource costs for the banks. Would you therefore be in favour of some form of code of conduct for debt rescheduling maybe under the auspices of the IMF, IBRD or BIS in order to reduce the negotiating costs? Yes 34 No 25

Comments:

14. Do you think that debt rescheduling negotiations should include representatives of all types of creditors, official and private, at the same meetings? Yes 23 No 34

Comments:

15. Should banks treat rescheduled debts which still yield the negotiated rate of interest as inferior assets in their balance sheets? Yes 22 No 30

15i If the answer to question 15 is Yes, please explain how you would value such assets:

This space may be used to expand answers to questions 14 and 14i:

16. Would the linking of debt reschedulings to IMF loan agreements with conditionality make banks more willing to reschedule debts before a crisis occurs? Yes 46 No 7

Comments:

IMPROVING THE QUALITY OF INFORMATION ABOUT LDC'S

17. Do you consider that the quality of information that your bank possesses regarding the developing countries is at least as good as that possessed by the IBRD, IMF or similar organisations? Yes 11 No 43

Comments:

18. Do you consider that the information that you do possess is adequate for country risk analysis? Yes 40 No 13

18i If the answer to question 18 is No, please indicate what improvements you would like to see:

This space may be used to expand answers to questions 17 and 17i:

19. For the majority of developing countries do you think that the quality of the information they have about their own economies is adequate for good economic and debt management policies? Yes .13. No .42.

Comments:

20. If the quality of information available to the banks and the developing countries improved, would this result in the banks lending more money to those countries? Yes .14. No .25.

Comments:

21. Would you like to see the establishment of a central organisation for the collection, analysis and dissemination of data about developing countries? Yes .44. No .12.

Comments:

22. Would you like to see the establishment of a system of credit rating for interbank and non-bank borrowers in the eurocurrency market? Yes .27. No .29.

Comments:

CO-FINANCING WITH IBRD OR SIMILAR INTERNATIONAL INSTITUTIONS

23. The following have been suggested as advantages and disadvantages of co-financing. If you agree, please tick Yes, if you disagree tick No.

Advantages

a) Reduced risk of default because of cross default clause with IBRD loans: Yes .42 No .12

b) IBRD is better at evaluating projects: Yes .29 No .21

c) Reduction in bank risk analysis effort and loan administration: Yes .13 No .41

d) Gives vicarious access to superior information which IBRD possesses about developing countries: Yes .40 No .14

Disadvantages

a) Reduced spreads therefore less profitability: Yes .31 No .23

Any other advantages or disadvantages, please specify:

This space may be used to expand any of the above answers:

24. Do you think that increased opportunities for co-financing will result in:

a) More private credit in total going to developing countries? Yes .35 No 23.

b) Existing levels of credit being switched into co-financing? Yes .43 No 13.

Comments:

25. Do you think that increased co-financing will result in commercial bank loans being extended to those countries that, to date, have been considered as too risky for private bank credit? Yes .17 No .32

Comments:

CREDIT INSURANCE AND LOAN GUARANTEE SCHEMES

26. Are you in favour of a system of independent, say OECD government, guarantees being extended to balance of payments loans and other loans not covered by official export credit insurance agencies? Yes .42 No .17

Comments:

27. Do you think that a system of guarantees may make some banks less prudent in their lending decisions? Yes .38 No .19

Comments:

28. Would you be in favour of national export credit insurance agencies, such as ECGD in the UK, extending their insurance role to cover medium and long term balance of payments finance to the developing countries? Yes .19 No .40

Comments:

29. Would you expect insured loans to attract lower spreads/ fees combination than uninsured loans to the same borrower? Yes .60 No ...

Comments:

30. As insured loans will be less risky than uninsured ones, do you think that the establishment of a loan insurance scheme will result in banks being tiered in the interbank market based upon the proportion of insured loans in their loan portfolio? Yes .43 No .35

Comments:

31. Do you think that insured loans should be treated preferentially in bank balance sheets when calculating capital assets ratios, liquidity ratios, loan concentration and total exposure? Yes .29 No .26

Comments:

PRUDENTIAL CONTROLS

32. Do you consider that the current differences between national prudential banking regulations result in the banks in less stringently regulated countries behaving less prudently than banks in more stringently regulated countries? Yes .42 No .15

Comments:

33. Do these differences in the national banking regulations influence your willingness to lend to banks in the less stringently regulated countries? Yes .45 No .12

Comments:

34. Do banks or branches in less stringently regulated centres pay more for interbank deposits than banks in more stringently regulated centres? Yes .36 No .12

Comments:

35. Do differences in national prudential regulations influence the location of your bank's offices abroad? Yes .26 No .27

Comments:

36. Do you consider that the central bank responsible for the supervision of a particular bank office is morally bound to act as a lender of last resort to that office if required? Yes .26 No .31

Comments:

37. Do you think that the decline in capital asset ratios over recent years has been:

a) The result of a learning process by bank management and therefore desired by that management? Yes .10 No .38

b) Not desired by the bank management but forced upon management by competition? Yes .41 No .10

Comments:

38. Do you think that the trend of declining capital asset ratios will continue? Yes .12 No .37

Comments:

39. Do you consider that a further decline will be detrimental to the stability of the international banking system? Yes .46 No ..6

Comments:

40. What do you consider to be the most appropriate capital asset ratio for your bank?

Comments:

INTERNATIONAL LENDER OF LAST RESORT

41. Would you like to see some form of lender of last resort operating in the international banking system? Yes 37. No 21.

42. If the answer to question 41 is Yes, which of the following forms would you favour:

a) Supranational institution with international regulatory powers.

b) National central banks providing lender of last resort facilities to the total worldwide business of banks registered in their jurisdiction.

c) A system of formal lines of credit from the IMF or BIS to each bank combined with equally formal lines of credit in the reverse direction. Thus banks in difficulty borrow from the IMF/BIS which in turn borrow from banks that are not in difficulties.

d) Officially encouraged formal lines of credit between private banks priced according to the interbank market's perception of each bank's riskiness; official encouragement would be in the form of a penal fee charged by the central bank in each jurisdiction if a bank has negotiated an inadequate quantity of lines of credit in its favour.

a 11. b 17. c .6. d .3.

Comments:

43. Alternative d) of question 42 provides a cost to banks engaging in high risk business while alternatives a) to c) do not. Therefore if you have chosen alternatives a), b) or c) do you think that banks generally will be encouraged to engage in more high risk lending? Yes .6. No 23.

Comments:

44. Is there an alternative structure of international lender of last resort that you favour?

MISCELLANEOUS

45. a) Are you generally in favour of bank deposit insurance? Yes 42. No 16.

b) Do you think that bank deposit insurance should be extended to all non bank deposits of each bank including those in foreign currency and at overseas branches? Yes 18. No 33.

c) Should such insurance also cover interbank deposits? Yes 7. No 45.

This space may be used to expand any of the above answers:

46. Would you favour a movement towards floating spreads on syndicated loans and the establishment of a deeper secondary market in loan participations? Yes 32. No 15.

Comments:

47. If a deeper secondary market were established, do you think that the result will be much different from the floating rate note market? Yes 25. No 27.

Comments:

48. Do you consider that a deep secondary market in loan participations would be helpful in enabling banks to diversify their portfolios? Yes 43. No 12.

Comments:

49. Do you think that a deep secondary market in syndicated loans would widen the participation in loans to LDC's beyond the eurobanks to:

a) banks that have not to date engaged in eurobanking? Yes 29. No 29.

b) non bank financial institutions? Yes 30. No 23.

Comments:

THANK YOU

Appendix VIII

QUESTIONNAIRE

THE EUROBOND MARKET AND DEVELOPING COUNTRIES

Section 1

Do you consider that the main reasons for the relatively small use made of the eurobond market by developing countries are:

a)	Because of the nature of the eurobond market, its investors and borrowers	Yes.20	No..2
b)	Because of the nature of the eurobond instruments that could feasibly be issued by developing countries	Yes..7	No.13
c)	Because of a combination of a) and b) above	Yes..9	No..8
d)	Other reasons. Please specify:		

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This space may be used to expand any of the above answers:

cont/...

Section 2

If you consider the nature of the eurobond market to be important in section 1, please answer the questions in section 2. Please also complete this section if a combination of a) and b) was considered important in section 1.

The eurobond market has not been a greater source of finance for developing countries because:

1) It is a market dominated by individual investors who perceive developing countries generally as too great a risk — Yes...8 No...13 — a = 8 b = 7 c = 4

2) The market is not dominated by individual investors but that investors perceive developing countries as too great a risk — Yes...23 No...3 — a = 14 b = 5 c = 0

3) The secondary market in developing country bonds is disproportionately thin compared with such a market for OECD government bonds or corporate bonds — Yes...20 No...3 — a = 6 b = 11 c = 2

4) This thinness of the secondary market seriously reduces the liquidity of developing country bonds and therefore deters investors — Yes...22 No...3 — a = 7 b = 10 c = 2

5) The reluctance of some developing countries to obtain a credit rating seriously limits their access to the eurobond market — Yes...10 No...13 — a = 0 b = 9 c = 8

6) Are there any other aspects of the nature of the eurobond market which you think have limited the access of developing countries to that market? Please specify: — Yes... No... — a = 5 b = 5 c = 3

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This space may be used to expand any of the above answers:

cont/...

Section 3

If you consider the nature of the eurobond instrument to be important in section 1 above, please answer the questions in this section. Please also complete this section if a combination of a) and b) was considered important in section 1.

7) As the bonds are issued in eurocurrencies, many investors endure exchange risk in addition to the other risks associated with bond investments. This additional risk deters investors — Yes..2 No..14 — a = 0 b = 6 c = 10

8) The fixed interest rate nature of the majority of eurobond issues deters investors — Yes...1 No..15 — a = 1 b = 3 c = 11

9) The fixed interest rate nature of the majority of eurobond issues combined with the long term nature of the instrument deters borrowers — Yes...1 No..16 — a = 1 b = 7 c = 8

10) In your experience, are the costs of making a eurobond issue by a developing country greater than those incurred in raising a syndicated loan — Yes...13 No..1 — a = 1 b = 8 c = 7

11) If the answer to 10) above is Yes, does this deter borrowers — Yes...5 No..7 — a = 1 b = 8 c = 4

12) Are there any other aspects of the nature of the eurobond instrument that have limited its use by developing countries? Please specify: — Yes... No... — a = 3 b = 4 c = 5

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This space may be used to expand any of the above answers:

cont/...

Section 4

13) Please indicate briefly why you think that some developing countries, which have already had considerable access to the eurocurrency syndicated loans market, also raise funds in the eurobond market:

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Section 5

14) Please assign a measure of importance to questions 1 through 12. The measure of importance should be along the scale a - very important, b - moderately important, c - not important.

1 ; 2 ; 3 ; 4 ; 5 ; 6 ;
7 ; 8 ; 9 ; 10 ; 11 ; 12 ;

15) If you specify other reasons in section 1, please also assign a measure of importance to each reason along the scale a to c as in question 14) above.

Reason 1 .....
2 .....
3 .....
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16) Do you have any other comments to make about the use of the eurobond market by developing country borrowers:

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17) May I contact you again in order to discuss further some of your answers? Yes... No...

18) Do you wish to receive a copy of the study to which this questionnaire relates? Yes... No...

If you are not the person to whom the covering letter was addressed, please give your name and position within the company:

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THANK YOU

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